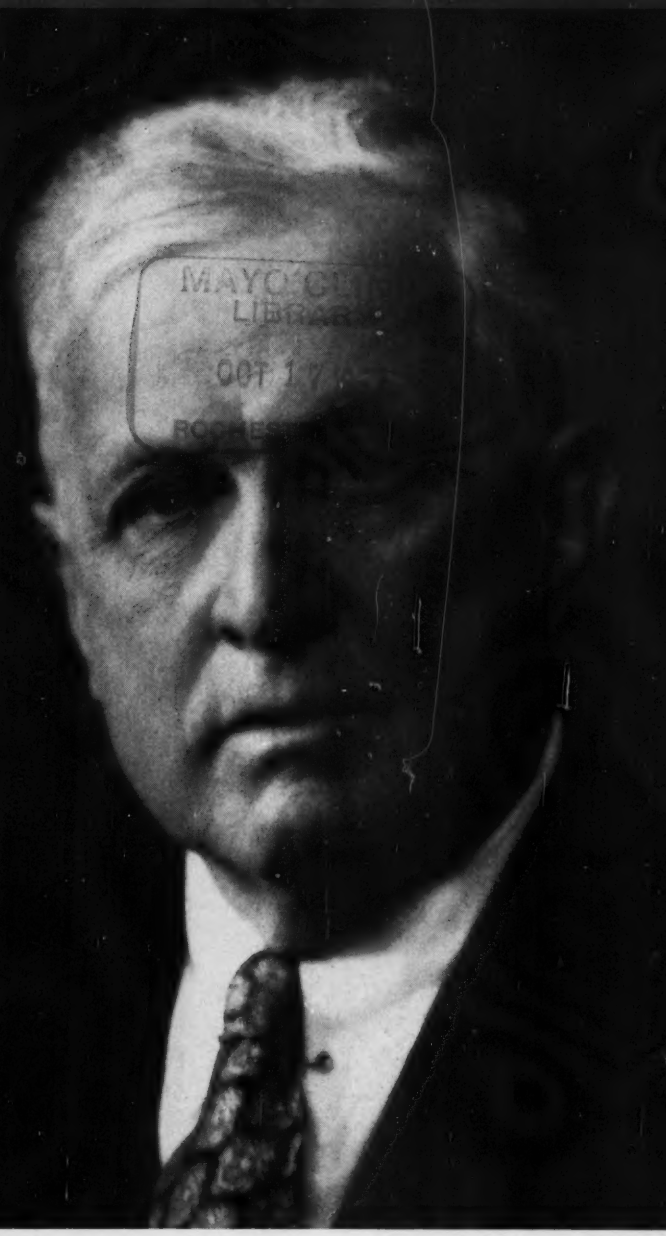
Journal of the AMERICAN PHARMACEUTICAL ASSOCIATION

OCTOBER 1957

V. 18, #10

Practical Pharmacy Edition



MAYO CLINIC LIBRARY
OCT 17

SPECIAL EDUCATION ISSUE

Dedicated to Dr. H. A. B. Dunning

(See Page 596)

an invitation to pharmacy students

to participate in the

PHARMACEUTICAL ECONOMICS ESSAY CONTEST

Sponsored by J. B. Roerig and Company

Designed to Stimulate Interest in Practical Proposals for The Solution of Economic Problems Affecting the Profession

$1500 in Cash Prizes..... Top Award **$750**

A $250 Cash Award for the Best Essay Submitted From Each of the Four Classes of Competition and a Grand Prize of $500 for the Best Paper Among the Top Four Winners:

categories of competition:

(1) Sophomores
(2) Juniors
(3) Seniors
(4) Graduate Students

official rules of the contest:

ROERIG

New York 17, New York

(1) Sophomore, junior, senior, and graduate students enrolled in accredited colleges of pharmacy in the United States are eligible to participate in the contest.

(2) Essays should be written on any current problem in the field of pharmaceutical economics such as expanding professional services, inventory control, public opinion regarding prescription prices, controls over increasing operating expenses, securing a greater share of the market for vitamin products, etc.

(3) Manuscripts should not exceed 2500 words; however, length will not in itself be a factor in determining excellence. Essays will be judged on the basis of literary quality, originality, and practicability of solutions to economic problems.

(4) Submit manuscripts in quadruplicate, typewritten and double-spaced.

(5) Entries should be mailed to J. B. Roerig and Company, c/o Pharmaceutical Economics Essay Contest, 800 Second Avenue, New York 17, New York. They must be postmarked no later than February 15, 1958 in order to qualify.

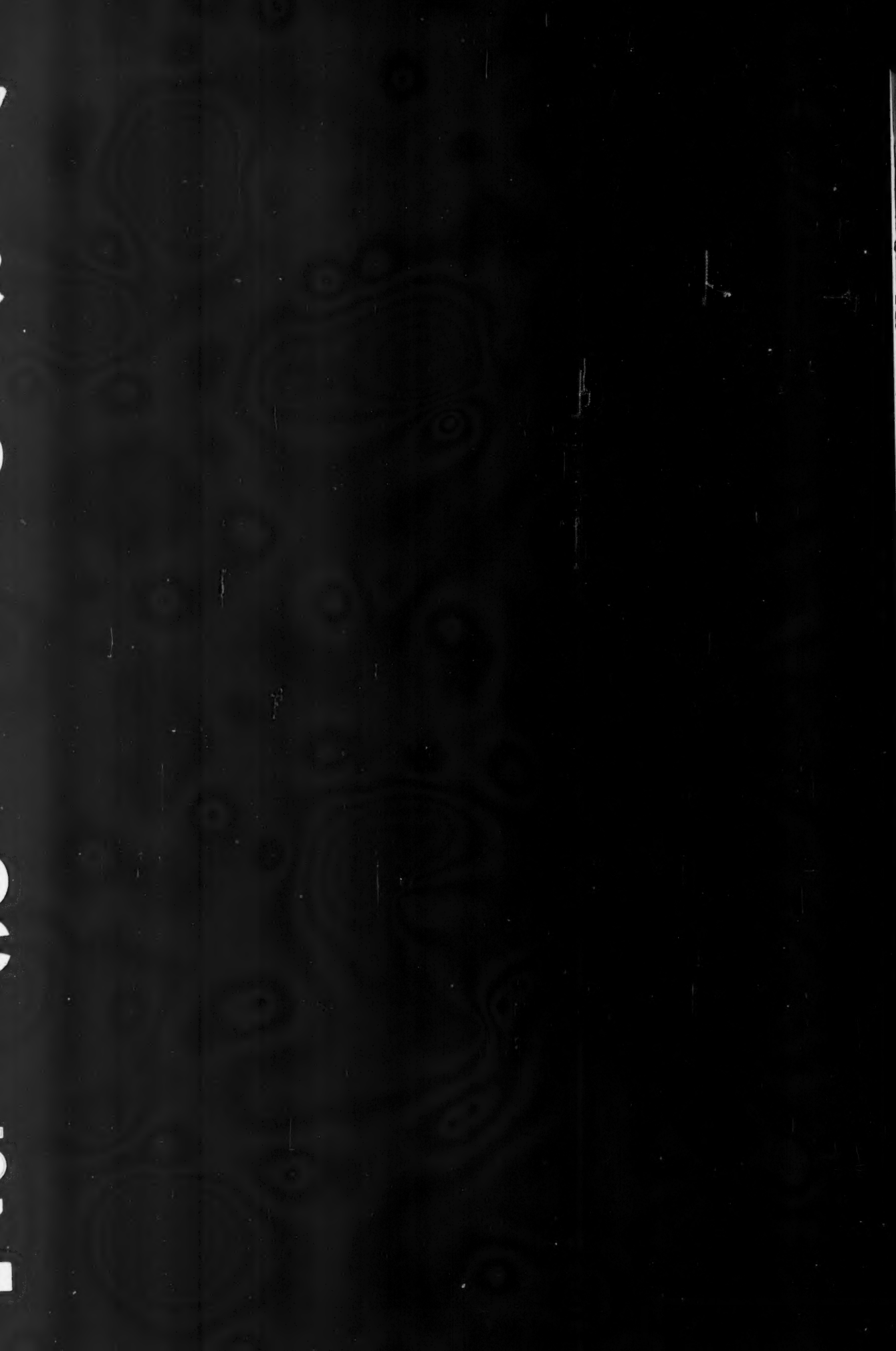
(6) Essays should be clearly identified as to name and address of author, category of competition, and name of college being attended; this information should be placed on a separate sheet, attached to the first page of the manuscript.

(7) Only one entry may be submitted by any student. Several students may serve as co-authors of an essay but only one prize will be awarded such an entry if selected as a winner.

(8) Prize-winning essays become the property of J. B. Roerig and Company and the authors agree that these may be submitted for publication in pharmaceutical journals, or used in any other manner; all other manuscripts will be returned to authors on written request.

(9) A committee composed of eminently qualified persons in the field of pharmacy will be selected to judge entries in the four categories of competition and also to select the Grand Prize winner. The decisions of the judges shall be final. Persons employed by J. B. Roerig and Company or any of the other Divisions of Chas. Pfizer & Co., Inc., will not serve as judges.

(10) The names of winners will be announced during the Annual Meeting of the Student Section of the American Pharmaceutical Association to be held in Los Angeles, California, in April, 1958.


We
In
Fr
TAST
SENSA
candyb
low c
flavored
PRIC
LOW,
(F
FORM
KING
cellent
Each
Vitami
Vitami
Thiami
Ribofla
Niacin
Ascorb
Vitami
Pyrido
Calciu
Folic
Vitam

West-ward "Vitamin Candies"

In *New* display carton with

Free Taste-Samples container attached

Your Profit 54%

suggested selling price
$1.79 per bottle of 50

TASTE

SENSATIONAL—Children will love the candyball flavor; ideal for adults who can't swallow capsules. Taking this delicious cherry-flavored tablet is a real candy treat.

PRICE

LOW, LOW is the price picture

	List Price
50	**$ .96**
12 × 50	**10.94**
(Family Size) 250	**4.30**
1000	**16.00**
5M bulk @	**15.40**

FORMULA

KING SIZE—a regular giant of a formula. Excellent therapy for adults yet ideal for junior too.

Each delicious ***Vitamin Candy*** *contains:*

Vitamin A	5000 U.S.P. Units
Vitamin D	1000 U.S.P. Units
Thiamin Chloride	2 mg.
Riboflavin	2 mg.
Niacinamide	10 mg.
Ascorbic Acid	50 mg.
Vitamin B_{12}	3 mcg.
Pyridoxine HCl	1 mg.
Calcium Pantothenate	3 mg.
Folic Acid	0.1 mg.
Vitamin E	1.0 Int'l Unit

West-ward, Inc. 745 Eagle Ave. New York 56, N. Y.

The West-ward catalog is an excellent index to the true and current market value of over 400 pharmaceutical products listed only under generic terms or simple explanatory names—includes capsules, tablets, liquids, ointments and injectables.

Send For Your Copy Today—Dept. P-7

A NEW NON-NARCOTIC ANALGESIC
WITH THE POTENCY OF CODEINE

DARVON

(Dextro Propoxyphene Hydrochloride, Lilly)

is the new, chemically different analgesic which is equally as potent as codeine yet much better tolerated. Orally effective, 'Darvon' is valuable in any disease associated with pain. It does not come within the restrictions of the Harrison Narcotic Act.

'Darvon' is available in 32 and 65-mg. pulvules.

DARVON COMPOUND

(Dextro Propoxyphene and Acetylsalicylic Acid Compound, Lilly)

further increases effectiveness by combining the analgesic action of 'Darvon' with the antipyretic and anti-inflammatory benefits of 'A.S.A. Compound.'*

Each Pulvule 'Darvon Compound' provides:

'Darvon'	32	mg.
Acetophenetidin	162	mg.
'A.S.A.' (Acetylsalicylic Acid, Lilly)	227	mg.
Caffeine	32.4	mg.

An intensive detailing, direct mail, and journal advertising program is certain to create a heavy demand for these important products. Order adequate stocks from your Lilly wholesale distributor. Supplied in bottles of 100.

*'A.S.A. Compound' (Acetylsalicylic Acid and Acetophenetidin Compound, Lilly)

Lilly
QUALITY / RESEARCH / INTEGRITY

ELI LILLY AND COMPANY, INDIANAPOLIS 6, INDIANA, U. S. A.

720222

Journal
of the **AMERICAN PHARMACEUTICAL ASSOCIATION**

Practical Pharmacy Edition
PUBLISHER
American Pharmaceutical Association

SECRETARY AND GENERAL MANAGER
Robert P. Fischelis

COMMITTEE ON PUBLICATIONS
Chairman, John B. Heinz, George F. Archambault, Robert P. Fischelis, J. Warren Lansdowne, and Hugo H. Schaefer

EDITOR
Eric W. Martin

Associate Editor: Samuel W. Goldstein

Contributing Editors: Richard R. Dier, George B. Griffenhagen, Paul F. Parker; *Editorial Assistants:* Evelyne T. Auerbach, Dorothy W. Brown; *Business and Circulation Manager:* Felix B. Gorrell; *Membership Records:* Mary Louise Bergner; *Art Editor:* Paul Reed

ADVERTISING MANAGER
Robert I. Bischoff

ASSOCIATION OFFICERS
President, Joseph B. Burt, Lincoln, Nebr.; *Honorary President,* Frank O. Taylor, South Fort Mitchell, Ky.; *1st Vice President,* J. Warren Lansdowne, Indianapolis, Ind.; *2nd Vice President,* Leroy A. Weidle, Sr., St. Louis, Mo.; *Secretary,* Robert P. Fischelis, Washington, D.C.; *Treasurer,* Hugo H. Schaefer, Yonkers, N.Y.

HOUSE OF DELEGATES OFFICERS
Chairman, Nicholas S. Gesoalde, New York, N.Y.; *Vice Chairman,* Ewart A. Swinyard, Salt Lake City, Utah; *Secretary,* Robert P. Fischelis, Washington, D.C.

COUNCIL OFFICERS
Chairman, John B. Heinz, Salt Lake City, Utah; *Vice Chairman,* Henry H. Gregg, Minneapolis, Minn.; *Secretary,* Robert P. Fischelis, Washington, D.C.

COUNCIL MEMBERS
George F. Archambault (1959), Bethesda, Md; Roy A. Bowers (1960), Newark, N.J.; Grover C. Bowles (1960), Memphis, Tenn.; H. A. B. Dunning (1958), Baltimore, Md.; Louis J. Fischl (1958), Oakland, Calif.; F. Royce Franzoni (1959), Arlington, Va.; Henry H. Gregg (1958), Minneapolis, Minn.; John B. Heinz (1960), Salt Lake City, Utah; Robert L. Swain (1959), New York, N.Y.; Joseph B. Burt (1959), Lincoln, Nebr.; J. Warren Lansdowne (1958), Indianapolis, Ind.; Leroy A. Weidle, Sr. (1958), St. Louis, Mo.; Robert P. Fischelis (1959), Washington, D.C.; Hugo H. Schaefer (1959), Yonkers, N.Y.; Nicholas S. Gesoalde (1958), New York, N.Y.; John A. MacCartney (1958), Detroit, Mich.

SECTION OFFICERS
Scientific Section: Chairman, Ewart A. Swinyard, Salt Lake City, Utah; *Secretary,* Robert C. Anderson, 317 Cecil Street, Indianapolis 19, Ind. *Section on Practical Pharmacy: Chairman,* Samuel W. Goldstein, Washington, D.C.; *Secretary,* Glen J. Sperandio, 1808 Summit Drive, West Lafayette, Ind. *Section on Education and Legislation: Chairman,* Albert L. Picchioni, Tucson, Ariz.; *Secretary,* Richard K. Mulvey, Wayne University, Detroit 1, Mich. *Section on Pharmaceutical Economics: Chairman,* Harold W. Pratt, Chicago, Ill.; *Secretary,* Benjamin A. Smith, 3838 Hartman Drive, Indianapolis 18, Ind. *Section on Historical Pharmacy: Chairman,* Alex Berman, Ann Arbor, Mich.; *Secretary,* George Griffenhagen, The Smithsonian Institution, Washington 25, D.C. *Pharmacy Student Section: President,* James Dowling, University of Michigan, Ann Arbor, Mich.; *Secretary,* Lucille Trimarco, Philadelphia College of Pharmacy and Science, Philadelphia 4, Pa.

WOMEN'S AUXILIARY
President, Mrs. Leib L. Riggs, Portland, Ore. *1st Vice President,* Mrs. R. O. Richards, Fort Myers, Fla.; *2nd Vice President,* Mrs. William P. Cusick, Detroit, Mich.; *Secretary,* Mrs. Elmer M. Plein, University of Washington, Seattle, Wash.; *Treasurer,* Mrs. Earl P. Guth, Columbus, Ohio; *Chairman of Student Loan Fund,* Mrs. Troy C. Daniels, San Francisco, Calif.

This Journal is the official monthly publication of the AMERICAN PHARMACEUTICAL ASSOCIATION, dedicated to the elevation and unification of the profession of Pharmacy through communication of authoritative scientific, professional, and cultural information. It is devoted to the education of pharmaceutical practitioners, and it functions as the professional voice of Pharmacy, which is directed to all members of the profession of Pharmacy in education, government, industry, and professional practice.

VOL. 18 NO. 10 **OCTOBER 1957**

PHARMACEUTICAL EDUCATION IN PUERTO RICO 598

Luis Torres Diaz supplies perspective by reviewing the education of the pharmacist in his country from 1512 to 1957

PHARMACEUTICAL EDUCATION IN PHOTOS 601, 610

The major disciplines included in the modern pharmaceutical curricula and the faculty advisers to the APhA Student Branches are shown on 9 pages of photographs

PRE-PROFESSIONAL EDUCATION IN PHARMACY 608

Donald C. Brodie justifies the need for 2 years of study in the basic and social sciences, the humanities, and in mathematics prior to a 3-year professional curriculum

PHARMACY INTERNSHIP TRAINING 612

Louis W. Busse reviews the objectives, principles, and requirements for internship training in Pharmacy

THE FUTURE OF PHARMACEUTICAL EDUCATION 614

Linwood F. Tice predicts broader curricula and greater opportunity for specialization in Pharmaceutical Education

HEALTH FOR PEACE 616

Howard A. Rusk shows by means of anecdotes full of human interest that health services provide a more potent tool for international understanding than "atoms for peace" or foreign aid in American dollars

CURRENT COMMENT 586, 590, 592, 630

Death from TV—Rabies in a Bat—Loans to Pharmacies—Tools of the Apothecary—Pan American Congress Temporary Section Chairmen—APhA Officers for 1957–58—American Chemical Society Meeting—Dr. Urdang Retires—Graduate Programs in Pharmacy 1957–58—Communicable Diseases Summary

DEPARTMENTS

ON THE ECONOMIC SIDE	620	PROGRESS IN MEDICINE	625
NEW AND NONOFFICIAL DRUGS	622	NEW PRESCRIPTION PRODUCTS	628

INDEXES 631

EDITORIAL

LETTERS	594
EDITORIALS	595
STRAIGHT FROM HEADQUARTERS	596

NEWS

WASHINGTON VIEWS	573
NEWS AND NOTES	577
BRANCHES	584

The *Journal of the American Pharmaceutical Association* is published monthly by the AMERICAN PHARMACEUTICAL ASSOCIATION in two editions: *Scientific Edition* and *Practical Pharmacy Edition,* under the supervision of the Committee on Publications of the Council of the Association, Publication Office, 20th and Northampton Streets, Easton, Pennsylvania. Executive, Editorial, and Advertising Offices: 2215 Constitution Avenue, N. W., Washington 7, D. C. **Annual Subscription**—United States, Canada, Pan America, and Spain, *Practical Pharmacy Edition* $5.00, *Scientific Edition* $6.00, both editions $10.00. Other foreign: *Practical Pharmacy Edition* $6.00, *Scientific Edition* $7.00, both editions $12.00. Subscription rates are subject to change without notice. Members of the AMERICAN PHARMACEUTICAL ASSOCIATION receive the combined subscription as a part of their annual dues. Members may request omission of either edition, but this will not reduce the amount of the annual dues. **Single Copies**—*Practical Pharmacy Edition:* United States, Canada, Pan America, and Spain $0.50; other foreign $0.60. *Scientific Edition:* United States, Canada, Pan America, and Spain $0.60; other foreign $0.70. **Change of Address**—Members and subscribers should notify both the Post Office and the AMERICAN PHARMACEUTICAL ASSOCIATION about any change of address immediately. **Claims**—Missing numbers will not be supplied if claims are received more than 60 days after the date of issue, or if loss was due to failure to give notice of change of address. The ASSOCIATION cannot accept responsibility for foreign delivery when its records indicate shipment has been made. **Entered** as second class matter January 23, 1917, at the Post Office at Easton, Pennsylvania, under the act of March 3, 1879, as 24 times a year; *Scientific Edition* monthly on the 5th and *Practical Pharmacy Edition* monthly on the 20th. Acceptance for mailing at a special rate of postage provided for in Section 1103, Act of October 3, 1917.

© *Copyright 1957, American Pharmaceutical Association, 2215 Constitution Ave., N.W., Washington 7, D.C.*

for the constantly growing number of elderly patients

DECHOLIN®

one tablet t.i.d.

clinical evidence substantiates

... the value of *hydro*choleresis with *Decholin* as routine adjunctive therapy to physiologically *improve liver function • produce fluid bile • restore intestinal function*

your sales record substantiates

... the large number of older patients with complaints related to hepatobiliary and gastrointestinal function for which *Decholin* is prescribed

DECHOLIN (dehydrocholic acid, *Ames*), tablets of 3¾ gr. (0.25 Gm.): bottles of 100, 500, 1,000; drum of 5,000.

Full 40% on all *Ames* products

AMES
COMPANY, INC • ELKHART, INDIANA — Ames Company of Canada, Ltd., Toronto

BEST WISHES FROM AMES TO ALL 1957 PHARMACY GRADUATES 07258

WASHINGTON VIEWS

PROCLAMATION

I, DWIGHT D. EISENHOWER, President of the United States of America, do hereby designate the period from November 10 to November 16, 1957, as American Education Week, and I urge our people to enter fully into its observance. Let them demonstrate their appreciation of the work of our Nation's teachers, and let them show their active support for every program designed to improve our schools and colleges, which are firmly engaged in building a better and a stronger Nation.

The current Asian influenza epidemic, according to Maj. Gen. Silas B. Hays, Surgeon General of the Army, can serve as a dry run on the defensive aspects of bacteriological warfare.

A "breakthrough" to a major epidemic appears in the offing as large outbreaks of Asian influenza are reported in California, Louisiana, Mississippi, New York, Texas, and Utah. Some schools have been closed. The Army, Navy, and Air Force have made inoculation against the disease mandatory. Civilian priorities have been established in many large cities to utilize the small supplies of vaccine to best advantage. The American Red Cross is providing courses in home nursing care to meet the emergency.

If nuclear bomb testing continues at the present rate, the theoretically safe limit of exposure for the global population will be reached by 1970, and by then people in some parts of the world may have accumulated more than three times the presumably safe dose of strontium-90, according to biologists at a meeting of the American Institute of Biological Sciences. As early as 1966, about 12,000 persons out of every 100,000,000 will have developed bone cancer, and 6250 will have suffered serious hereditary defects.

According to the Bureau of the Budget and the U. S. Department of Labor, the U. S. has been transformed in 50 years from a predominantly agricultural country to a predominantly industrial country supporting a gigantic superstructure with 1,000,000 elected officials and over 7,000,000 government employees serving 100,000 governments which will spend well over $120,000,000,000 this year serving more than 170,000,000 people, most of whom live in crowded urban areas.

According to Secretary of Labor James P. Mitchell, instead of training the workers we need, we have sought to steal them from competitors. Pirating—going under such euphemisms as "emergency recruitment"—may seem to have some temporary advantages for the rich employer, but it just moves skilled workers around from one job to another, relieving a shortage in one plant only to create one in another.

Family income is up 8% since 1955 and personal income in 1956 was higher than in 1955 in nearly every state. Average family income is now estimated at $4800.

Long-range plans include establishment of a NATO university which will draw its faculty and students from the finest minds in Europe and America.

LAST MINUTE NEWS

About Nov. 1, Pfizer Laboratories will be on the market with an influenza vaccine, bringing the number of American manufacturers to 7, it is reported.

The first license for an adenovirus vaccine has just been issued to Parke, Davis & Company by the U. S. Public Health Service.

Between August 12, when Asian influenza vaccine first became available for distribution, and September 19, the Public Health Service released 1,526,590 cc. By the end of September, 6,000,000 cc. per week were being released as production was being accelerated.

Japan, where 18,000,000 have had Asian influenza this year, fears that the epidemic will recur this fall and winter. Japanese vaccine producers claim they are preparing Asian influenza vaccine from a strain superior for such use to that supplied by U. S. manufacturers.

Protection against loss of compensation as a result of infection with Asian influenza has become a fringe benefit enjoyed by dock workers in New York.

Dr. Justin L. Powers, Director of the National Formulary, was appointed the official APhA delegate to the meeting of the Council of the Federation Internationale Pharmaceutique which met in Opatia (Yugoslavia) September 22 to 25. He also met with the Expert Committee on the International Pharmacopeia of the World Health Organization in early October.

A total of 78,300,000 cc of polio vaccine has been produced and released since January 1. A recent survey by the National Foundation for Infantile Paralysis shows that the Salk vaccine came too late for more than 300,000 Americans now living who were paralyzed by the disease.

Exposure to atomic radiation, as well as X-ray treatment of a pregnant woman, can make unborn children mentally defective or emotionally disturbed.

An engraved plaque commemorating the filling of 2,000,000 prescriptions by J. Leon Lascoff & Sons Apothecary, New York City was presented at a recent banquet climaxing the New York Summer Sales Conferences of E. R. Squibb & Sons.

Rabies, which is on the increase among wild animals (foxes, skunks, bats, etc.), may be spread from one human to another, according to Dr. Karl F. Meyer, Hooper Foundation, University of California Medical Center.

A new illustrated booklet on diseases of the blood vessels of the brain, third ranking cause of death in the U. S. (179,110 deaths from strokes and other effects of cerebral vascular disease in 1956) was released recently by the U. S. Public Health Service.

At the National Institutes of Health, Bethesda, Md., on September 27 was held the first meeting of the newly-established 14-member Advisory Committee on Influenza Research appointed to assist the Public Health Service in appraising current influenza research.

The health of persons working in heavy automobile traffic may be threatened by anti-knock gasoline additives containing lead.

Smoking has been linked to cancer in mice, according to a report by Scottish scientists.

Almost none of the thousands of veterans who contracted malaria overseas during World War II now requires treatment by the Veterans Administration for the disease. The VA says that primaquine and chloroquine have been very effective in treating the disease.

The VA says 4 out of every 10 of the nation's 5,100,000 Korean veterans have received GI training to date. Approximately one-half of the 2,000,000 receiving education have gone to college.

Project 200 of the U. S. Army is a recruitment drive for 200 outstanding civilian specialists in 20 critical fields, including bacteriology, chemistry, health physics, radiobiology, and psychophysiology. To qualify for an officer's commission in the Regular Army, a doctor's degree or a master's degree plus three years' postgraduate experience, or a bachelor's degree and five years' experience is necessary.

The American Red Cross has issued a new edition of its First Aid text book which now recommends that a tourniquet should *not* be released once it has been put into place, minor wounds should be cleansed with *soap* and water, danger from tetanus should now be associated with *all* wounds, areas of the body suffering from frostbite should be warmed *rapidly*, and other such innovations.

Surveys will be conducted by the Public Health Service to determine if there is a more effective and economical means of providing medical care for its beneficiaries now receiving care through PHS hospitals in Chicago, Detroit, Memphis, and Savannah.

A new drug, citrated calcium carbimide (CCC), undergoing clinical trials as an anti-drinking drug for alcoholics, appears to be less violent in its side reactions than Antabuse.

New drugs in the news are Lilly's ethoxybutamoxane and chlorethoxybutamoxane, which are 20 times more potent than chlorpromazine as psychosedatives; tetrahydroharmine and dimethyltryptamine, hallucination drugs; delta-6-dehydro-9-α-fluoroprednisone and delta-6-dehydro-9-α-fluoroprednisolone, anti-inflammatory cortisone-like compounds; Verazide, a chemical derivative of isoniazid, a longer acting and less-toxic antituberculosis drug than the parent compound; and the pure antibody for ragweed pollen.

Aspirin apparently acts in the body as its oxidized product gentisic acid, produced under the effect of the pituitary gland.

Plans have been announced by Lieut. Gen. Louis D. Hershey to limit the Selective Service College Qualification Tests to 1 instead of 3 per year.

By December 31, 1957, over 123,000,000 people in this country will be protected by some form of health insurance.

Routine immunizations now recommended for children are diphtheria, whooping cough, tetanus, smallpox, polio, and influenza.

Ill health is the suicide motive in 40% of the males and 20% of the females; domestic difficulties in 30% of the males and 50% of the females; and unhappy love affairs cause 4% of male suicides and 10% of female suicides. Three times as many men as women commit suicide in the U. S., according to Dr. Henry P. Laughlin, writing in Ciba's "State of Mind."

The National Better Business Bureau warns against a rising tide of public resentment and Congressional wrath against false advertising and misleading claims for certain drugs, a threat to public confidence in all advertising.

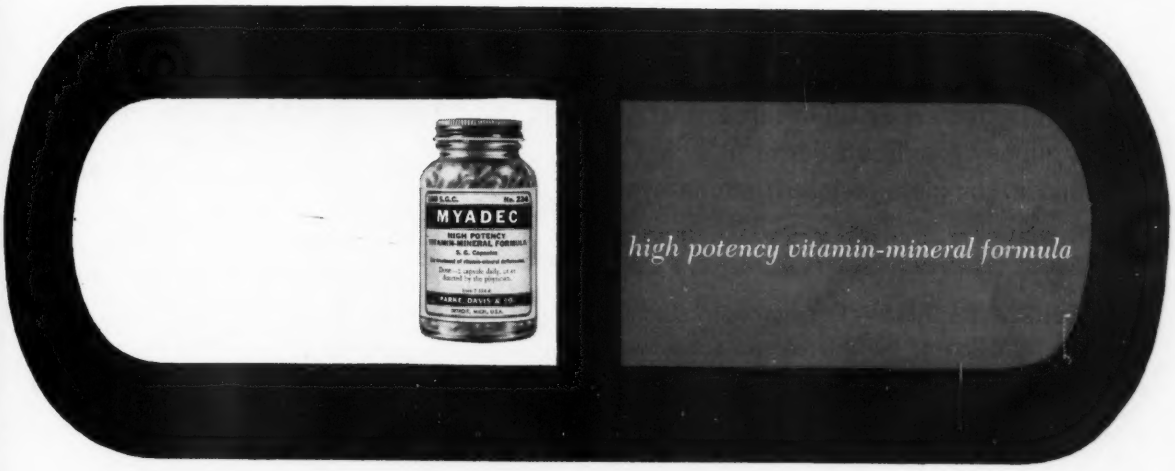
According to a recent AMA *Journal*, airline regulations govern diabetics requiring insulin, women in the very late stages of pregnancy, infants less than 6 weeks old, patients recovering from recent coronary thrombotic attacks, anemic patients, and those with certain respiratory difficulties.

There were 237,000 scholarships valued at $65,700,000 at U. S. Colleges and Universities in 1955–56.

GOOD MEDICINE FOR MORE SALES

MYADEC®

capsules



Increasingly, doctors are selecting MYADEC Capsules for their nutritionally deficient patients because of the dependable, comprehensive aid they provide—9 important vitamins in therapeutic potencies together with 11 valuable minerals and trace elements. Patients like MYADEC, too, because it's easy to take (only one capsule a day) and economical as well. As a result of this increasing doctor-patient preference, MYADEC is good medicine for stepping up sales. Is your supply adequate?

MYADEC Capsules are supplied in bottles of 30, 100, and 1,000.

PARKE, DAVIS & COMPANY **DETROIT 32, MICHIGAN**

50177

INCERT

new... unique one-step additive vial saves time, labor and money in your hospital

NO AMPULES... NO NEEDLES ...NO SYRINGES

Simply remove tamperproof cover of INCERT and push sterile plug-in through large hole in stopper of solution bottle. It's that easy... and a completely closed, sterile system.

EXCLUSIVE HOSPITAL-USE FEATURES

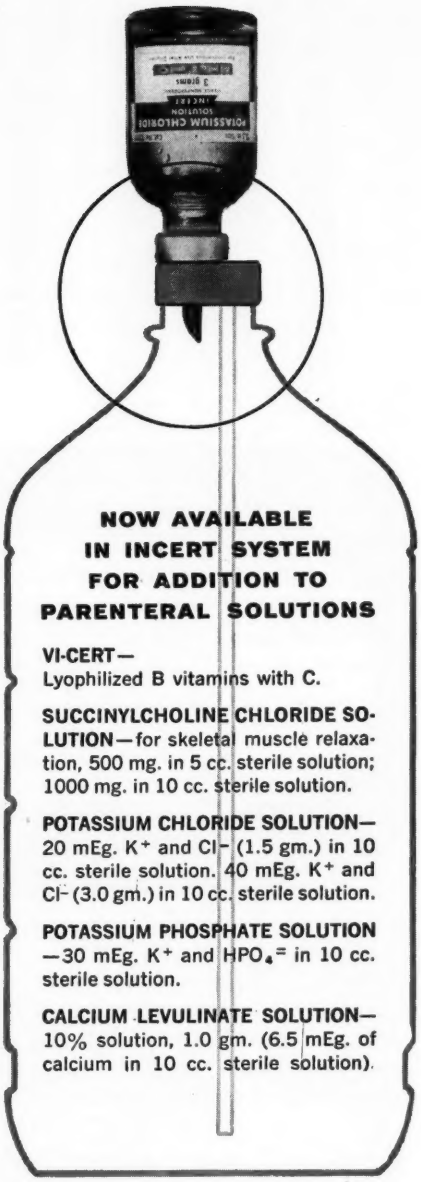
CONSERVES TIME — Instantaneous automatic supplementation of bulk parenteral solutions.

COMPLETELY STERILE—Closed system, from preparation to administration.

ECONOMICAL—Cuts labor and expense by eliminating ampules, needles and syringes.

SIMPLE TO USE—A foolproof system that eases the hospital care load.

***INCERT SYSTEM** is an original development of Travenol Laboratories, Inc. Complete literature and samples on request.*



NOW AVAILABLE IN INCERT SYSTEM FOR ADDITION TO PARENTERAL SOLUTIONS

VI-CERT—
Lyophilized B vitamins with C.

SUCCINYLCHOLINE CHLORIDE SOLUTION—for skeletal muscle relaxation, 500 mg. in 5 cc. sterile solution; 1000 mg. in 10 cc. sterile solution.

POTASSIUM CHLORIDE SOLUTION—20 mEg. K^+ and Cl^- (1.5 gm.) in 10 cc. sterile solution. 40 mEg. K^+ and Cl^- (3.0 gm.) in 10 cc. sterile solution.

POTASSIUM PHOSPHATE SOLUTION—30 mEg. K^+ and $HPO_4^=$ in 10 cc. sterile solution.

CALCIUM LEVULINATE SOLUTION—10% solution, 1.0 gm. (6.5 mEg. of calcium in 10 cc. sterile solution).

TRAVENOL LABORATORIES, INC. MORTON GROVE, ILLINOIS

Pharmaceutical Products Division of **BAXTER LABORATORIES, INC.**

NEWS and NOTES

ASSOCIATIONS

American Public Health Association is initiating a long range technical development program to help communities replace outdated health procedures. The purpose, according to *Dr. Reginald M. Atwater*, Executive Secretary, is "to provide leadership, stimulation and guidance to governmental and voluntary agencies. . . ." Initial concentration will be in 8 areas: radiological health, accident prevention, mental health, chronic disease and rehabilitation, child health, environmental health, medical care administration and public health administration.

A technical development board has been appointed to coordinate the program. The chairman of this board is *Dr. Martha M. Eliot*, former Chief, U.S. Children's Bureau and now Professor of Maternal and Child Health at the Harvard School of Public Health in Boston, Mass.

Arizona Pharmaceutical Association's new Executive Secretary is *Alfred J. Duncan* of Tempe, Ariz.

Indiana Pharmaceutical Association—At the recent annual convention, *Robert C. Heikowsky* of Fort Wayne was elected President; other incoming officers include *Merritt Skinner*, of Plymouth, 1st Vice President; *Thurman Miller*, of Terre Haute, 2nd Vice President; and *Charles Schreiber*, of Tell City, 3rd Vice President. The 5 business sessions included talks and discussions on professional relations, merchandising, legislation, personnel training, and the problems confronting small businessmen. The 1958 annual convention will be held in French Lick, June 16–18.

National Association of Retail Druggists—Among the guest speakers scheduled to speak at the 59th Annual Convention of the NARD, held in Minneapolis October 6–10, were *Senator Herbert Humphrey* (D—Minn.); *Senator Karl E. Mundt* (R—S.D.); *Henry E. Chapman*, Secretary of the Proprietary Articles Trade Association of England and former Associate Editor of *The Pharmaceutical Journal;* and *Commissioner George P. Larrick*, Food and Drug Administration.

North Carolina Pharmaceutical Association—The Women's Auxiliary recently provided new furniture for the women's lounge of the University of North Carolina School of Pharmacy. *Mrs. W. D. Welch, Jr.*, of Washington, is the new President; *Mrs. Dave McGowan*, of Chapel Hill, serves as Chairman of the Gifts Committee.

COLLEGES

Brooklyn College of Pharmacy—The Alpha Chapter of Delta Sigma Theta Fraternity has elected the following officers: *Alan Kudler*, Chancellor; *Ira Auslander*, Vice Chancellor; *Steven Jacobs*, Scribe; *Joseph Nizzari*, Historian; *Arthur Saccoccio*, Parliamentarian; *Guy Chu*, Sentinel; *Ralph Loffredo*, Athletic Director; and *Iso Finzi*, Social Scribe. All but one of the new officers are APhA Student Branch Members.

Ferris Institute in Big Rapids, Mich., will act as the host institution for the 1958 Plant Science Seminar to be held the week of August 18–22. *Dr. Edward P. Claus*, Dean of the Division of Pharmacy, will serve as the Local Secretary for the 35th annual Seminar.

Massachusetts College of Pharmacy—Among the changes in faculty status announced by *Dean Howard C. Newton* include the naming of *Dr. Heber W. Youngken* as Emeritus Professor of Pharmacognosy and Botany. *Mitchell J. Stoklosa* now becomes Professor of Pharmacy and *Dr. John W. Schermerhorn*, Associate Professor of Pharmacy; *James Mickles* and *Dr. Ronald N. Duvall* are now Assistant Professors of Chemistry.

INTERNATIONAL STUDENTS from 19 nations are welcomed to Richmond, Va., by E. Claiborne Robins, President of A. H. Robins Company, and Mrs. Robins who headed the local hospitality committee. After completing a year's study in U.S. high schools, the 64 students were enroute to Washington, D.C., after a sightseeing bus tour.

Oregon State College School of Pharmacy—New faculty members include *Benjamin F. Cooper*, formerly of the University of North Carolina, named Associate Professor of Pharmacy. *David M. Stuart*, formerly on the University of Texas staff, and *Glenn R. Svoboda*, now completing work for his doctor's degree at the University of Wisconsin, have been appointed Assistant Professors of Pharmaceutical Chemistry.

Philadelphia College of Pharmacy and Science is planning a Science Day Exhibit, November 1–2, to which science teachers, alumni and others are invited. The entire College will be open for inspection and the program will include demonstrations of equipment and techniques and showings of the sound-color films "Design for Life" and "Time for Tomorrow." A seminar entitled "Opportunities for Women in Pharmacy and Science" will also be held. . . . Aerosol Techniques, Inc., of Bridgeport, Conn., recently awarded the Department of Pharmacy a research grant for investigations to be made in the new aerosol laboratory. The research program will be conducted under the immediate direction of *Dr. Martin Barr*, Associate Professor of Pharmacy, with the collaboration of *Dr. Linwood F. Tice*, Director, Department of Pharmacy.

Temple University—A "Survey of Pharmacology" will be offered by the Bureau of Industrial and Special Services to members of the manufacturing industry and local pharmacists desiring a refresher course. The 10-session evening course, to begin October 2, will be conducted by *Dr. David E. Mann*, Associate Professor, School of Pharmacy.

University of Georgia—A special fund, in honor of *Dr. Robert C. Wilson*, Dean Emeritus of the School of Pharmacy, has been set up within the University of Georgia Foundation. Interest from the fund will be used to provide scholarships for worthy pharmacy students at the University and to give prizes for outstanding work in pharmacy by junior and senior students. Dr. Wilson served as Dean of the School of Pharmacy for 42 years, retiring in 1949. He also served as Honorary

Essay Contest

A Pharmaceutical Economics Essay Contest, open to sophomore, junior, senior, and graduate students enrolled in accredited Colleges of Pharmacy in the United States, is being sponsored by J. B. Roerig and Company. The contest is designed to stimulate interest in practical proposals for the solution of economic problems affecting the profession. A total of $1500 in cash prizes will be awarded as follows: a $250 prize for the best essay submitted from each of the four classes of competition and a Grand Prize of $500 for the best paper among the four winners. This will bring the top award to $750. Further details regarding the rules of the contest may be found in an advertisement on the inside front cover of THIS JOURNAL.

President of the APhA for the Association year 1949–50.

University of Houston College of Pharmacy—Construction on the new Fred J. Heyne Building that will temporarily house the College of Pharmacy and the College of Business Administration is well under way. The $1,500,000 building is scheduled for completion late next year.

University of North Carolina School of Pharmacy—*Dr. E. A. Brecht*, Dean, in announcing that a total of 82 new students have been accepted by the School this fall, said "It is interesting to note that almost 25% of these students have immediate family relatives in Pharmacy."

University of Toledo College of Pharmacy, in cooperation with the Lucas County Pharmaceutical Association, will sponsor a 1-day seminar for pharmacists on November 14. Speakers will include *Frank Rawling*, M.D., of Toledo; *Morton J. Rodman*, Professor of Pharmacology, Rutgers University; *Arthur Tye*, Associate Professor of Pharmacology, Ohio State University; and *Dean Chas. H. Larwood*, of the University. Members of a panel discussion group will include *Lyle Kahler*, M.D., *Henry Sempowski*, R.Ph., and *Sister Mary John*, Hospital Pharmacist, Mercy Hospital, Toledo.

GOVERNMENT

Federal Civil Defense Administration—*Dr. Paul S. Parrino* is the new Director, Medical Care Division. He recently had completed a special assignment as Post Surgeon and Medical Director of the Hungarian Refugee Reception Camp, Camp Kilmer, N.J. Before his graduation from Tulane University Medical School, in 1931, Dr. Parrino, a registered pharmacist, had served the FDA in laboratory and inspection work.

Office of Education—"Young America" has recently shown an interest in mathematics and science for the first time in almost 50 years. Results of a recent OE study, to be published shortly in full, indicate that the percentage of high school students enrolled in mathematics and science courses is now the highest in U.S. history. In part, this is attributable to the fact that more schools are offering such courses. The percentage of public high schools offering courses in chemistry or physics to 12th grade pupils rose from 77% in 1954 to 82% in 1956, the base year for the recent study. Wide regional variations in enrollments were found, too. In the South Atlantic area, 90% of the 10th grade pupils study biology, but in the Pacific Coast States, the figure drops to 65%.

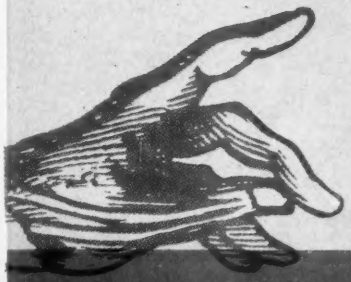
Public Health Service has announced a new program of financial support for advanced training of research scientists in the neurological and sensory disorders. In part, the program is designed to encourage advanced training in neurochemistry, neuropharmacology, neurophysiology or neuroanatomy. Stipends may range from $5,500 to $14,800 a year. Individual awards will be made for not less than 9 months and may be renewed. Applications may be obtained from Chief, Extramural Programs Branch, National Institute of Neurological Diseases and Blindness, National Institutes of Health, Bethesda 14, Md.... *Forrest J. Gerard*, member of the Blackfoot Indian tribe and former health association official in Montana and Wyoming, has recently been appointed Tribal Relations Officer, Division of Indian Health. In his new post, Mr. Gerard will be responsible for relations between some 250 Indian tribes and the Federal Government's Indian health program. . . . *Dr. Paul D. MacLean*, formerly Associate Professor of Physiology at Yale University, has joined the National Institute of Mental Health as Chief, Section on Limbic Integration and Behavior, Basic Research Branch.

HOSPITALS

American Society of Hospital Pharmacists has named the following officers to serve during the 1958–59 term: *Robert C. Bogash*, as President-Elect; and *Clifton J. Latiolais* as Vice-President-Elect. Mr. Bogash is Chief Pharmacist of the Lennox Hill Hospital in New York City; Mr. Latiolais is Assistant Director of the Audit of Pharmaceutical Service in Hospitals being carried out through the Division of Hospital Pharmacy, APhA and ASHP.

MERRELL RESEARCH LABORATORY construction began recently as Frank N. Getman, President of Wm. S. Merrell Company, broke ground for the new $1,000,000 building. Looking on (l to r) are Nelson M. Gampfer, Chairman of the Board; Harold W. Werner, Vice President in Charge of Research; and Charles H. Tilford, Head of Organic Research.

Introducing:



AN IMPORTANT NEW DRUG

An outstanding Robins *research discovery*

Robaxin®

(Methocarbamol Robins, U. S. Pat. No. 2770649)

for skeletal muscle relaxation

ROBAXIN—an entirely new drug—was synthesized in the Robins Research Laboratories, and has been exhaustively studied for five years. It ushers in a new era in skeletal muscle relaxation for the physician—and *a new era in prescription business in this category for you.*

Note the significant advantages of ROBAXIN:

- **Highly potent—and long acting**
- **Virtually free of adverse side effects**
- **Does not reduce normal muscle strength or reflex activity**
- **Beneficial in 94.4% of cases tested**

The ROBAXIN story is being hammered home to the physicians in your area this month through intensive promotion; and a heavy demand for this new skeletal muscle relaxant is inevitable.

But don't *you* relax! Prepare for it right now with an ample stock.

Robaxin for superior relief

INDICATIONS: Acute back pain associated with: (a) muscle spasm secondary to sprain; (b) muscle spasm due to trauma; (c) muscle spasm due to nerve irritation; (d) muscle spasm secondary to discogenic disease and postoperative orthopedic procedures; and miscellaneous conditions, such as bursitis, fibrositis, torticollis, etc.

HOW SUPPLIED: ROBAXIN Tablets (white, scored), each containing 0.5 Gm. methocarbamol. Bottles of 50 and 500.

A. H. ROBINS CO., INC., RICHMOND 20, VA.
Ethical Pharmaceuticals of Merit since 1878

Presbyterian-St. Luke's Hospital, a consolidation of 2 of Chicago's oldest hospitals, is now engaged in an $18,500,000 development program in the city's West Side Medical Center to provide greatly expanded facilities for medical service, teaching and research. . . . *Dr. Karl S. Klicka,* Hospital Director, has announced the appointment of *Louis Gdalman* as Director of Pharmacies. A graduate of the College of Pharmacy, University of Illinois, Mr. Gdalman has been associated with St. Luke's Department of Pharmacy since 1930. He also serves as lecturer in Northwestern University's School of Hospital Administration and in the Hospital Pharmacy Institutes, American Hospital Association.

Wyeth Laboratories—*Harold L. Ferrier* has been appointed Manager of Hospital Promotion and will direct hospital relations programs. A member of the staff for some 20 years, Mr. Ferrier had previously served as Assistant Director, Clinical Associate Section, and at one time had represented the firm at the Mayo Clinic.

INDUSTRY

Abbott Laboratories has added 6 physicians to its Medical Department staff including *Robert L. Herting,* M.D.; *Donald A. Stuart,* M.D.; *Samuel J. Anderson,* M.D.; and *Peter J. Farago,* M.D.; who rejoined the staff after a year's absence as Deputy Medical Director, FDA. *Peter H. Nash,* M.D., recently became Medical Director of Abbott Laboratories-Canada; and *Mario Gaudino,* M.D., former Associate Director of Medical Writing and Advertising at Lederle Laboratories, will become Medical Director of the Export Companies this winter.

American Cyanamid Company—*Allan B. Clow,* formerly General Manager, Farm and Home Division; and *General Anthony C. McAuliffe,* formerly General Manager, Engineering and Construction Division, were recently named Vice Presidents.

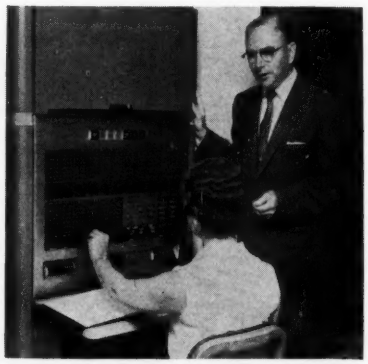
Anahist Research Laboratories—According to word received from *Professor S. B. Jeffries,* formerly Chairman, Department of Pharmacy Administration, Brooklyn College of Pharmacy, he has been named Director of the Anahist Research Laboratories' "Pharmacy Scholarship Fund."

Chemway Corporation—*Jack Nagler,* Ph.D., has been made Director of Product Development for the Dunbar Laboratories Division. He was formerly Research Director of Northam Warren Corporation.

Exposition of Chemical Industries—The 26th Exposition being held at the Coliseum in New York, December 2–6, will include displays by some 530 exhibitors. New sections added this year include Chemical and Chemical Materials Section, Rocket and Satellite Section, and the Laboratory Materials and Supplies Section.

Gillette Company has created the Gillette Laboratories to develop and distribute a limited number of improved proprietary drug items. Consulting and manufacturing arrangements were recently completed between Gillette and the Upjohn Company, as a major step in this direction.

Norwich Pharmacal Company—As part of the company's expansion program, 4 new buildings are under construction outside Norwich, N.Y., two of which will provide facilities for the manufacture of Furoxone and Furacin, the nitrofuran drugs developed by the company.



JOHNSON & JOHNSON'S new IBM electronic computer installation at New Brunswick, N.J., expedites order writing, billing, inventory control, and sales analysis for J&J plants across the country. Controller Ernest A. Carlson (r) inspects the mechanical brain in operation.

Parke-Davis and Company recently appointed *Dr. James R. Fitzsimmons* to its clinical investigation staff. A physician in private practice before joining P-D, he holds a Ph.D. in pharmacology and pathology and an M.D. from the University of Wisconsin. . . .The Canadian Pharmaceutical Association has presented *George A. Bender,* editor of *Modern Pharmacy* and P-D Retail Promotion Manager, with a life membership in honor of his editorship of "A History of Pharmacy in Pictures."

A. H. Robins Company has appointed *Dr. Robert H. Jordan* to its medical staff as an Associate Director of Clinical Research. A former Navy officer, he holds the Ph.D. in organic chemistry and an M.D. from the University of Virginia.

Schering Corporation, for the first 6 months of 1957, allocated $171,000 toward grants, fellowships and outside research in the basic medical and clinical sciences. . . .*Dr. J. C. Siegrist,* Director of Veterinary Medicine, was made President of the Industrial Veterinarians' Association at its recent Cleveland, O., meeting. . . .*Roy Conner,* Veterinary Marketing Manager, has been elected Secretary-Treasurer of the American Veterinary Exhibitors' Association.

E. R. Squibb & Sons—*Horace A. Holaday* who joined the company in 1920, as Director of Biochemical Re-

"DON'T TAKE A CHANCE"

Most of us do just that ! ! !

How?—By not adequately insuring our property.

THE DRUGGISTS' OWN
Service Security Savings
THE AMERICAN DRUGGISTS' INSURANCE CO.
American Building CINCINNATI, OHIO
INSURANCE CO.

Consult Our Agent

now! One of the fundamental drugs in medicine, in S.K.F.'s top-selling **sustained release** form

new!

THORAZINE* SPANSULE†

capsules

30 mg. 75 mg. 150 mg. 200 mg.

Advantages: Convenience—all-day or all-night therapy with only one dose
Continuous, uniform action
Little likelihood of forgotten doses

'Thorazine' *Spansule* capsules provide *sustained therapy* in all indications where other oral dosage forms of 'Thorazine' have proved valuable.

		Package Size	Suggested Price to Retailer
SKF	'Thorazine' *Spansule* capsules, 30 mg.	Bottles of 30 Bottles of 250	$ 3.18 each 25.20 each
SKF	'Thorazine' *Spansule* capsules, 75 mg.	Bottles of 30 Bottles of 250	4.53 each 35.80 each
SKF	'Thorazine' *Spansule* capsules, 150 mg.	Bottles of 30 Bottles of 250	5.43 each 43.10 each
SKF	'Thorazine' *Spansule* capsules, 200 mg.	Bottles of 30 Bottles of 250	6.04 each 47.80 each

Smith, Kline & French Laboratories, Philadelphia

SKF

*T.M. Reg. U.S. Pat. Off. for chlorpromazine, S.K.F.
†T.M. Reg. U.S. Pat. Off. for sustained release capsules, S.K.F.

One of the important ways

MASSENGILL *contributes*

to make your pharmacy ℞ headquarters

. . . by constant research and development of new products to meet the physician's needs and to benefit his patients. Here are representative products developed in recent years which are sending prescriptions to your store—

OBEDRIN®

to curb appetite and establish desired eating patterns.

HOMAGENETS®

the only solid homogenized vitamins, quickly absorbed, quickly utilized.

ADRENOSEM® Salicylate

the unique systemic hemostat which controls capillary bleeding.

SALCORT®-DELTA

prednisone-salicylate combination for treatment of the severe phase of rheumatic disease.

SALCORT®

cortisone-salicylate therapy for a wide range of rheumatic disorders.

SAFERON®

peptonized iron, palatable, well-tolerated, most effective in iron-deficiency states.

Check with your Massengill representative on these volume-builders.

THE S. E. MASSENGILL COMPANY

Bristol, Tennessee

THE S. E. MASSENGILL CO.
507 West 33rd St.
New York 1, N. Y.

THE S. E. MASSENGILL CO.
208-214 W. Nineteenth St.
Kansas City 8, Mo.

THE S. E. MASSENGILL CO.
250 Fourth Street
San Francisco, California

PITMAN-MOORE'S FIRST VIAL of Asian Influenza Vaccine is displayed in the N.Y. Stock Exchange as officials of the parent company participated in the recent, initial listing of Allied Laboratories' stock; (l to r) J. T. Cahill, Treasurer, and J. L. McKee, President, Allied Laboratories; K. F. Valentine, President, Pitman-Moore; J. H. Marcus, stock specialist; and E. C. Gray, Executive Vice President of the Exchange.

search, has retired. Most recently his position was that of Assistant to the Vice President and Director of Manufacturing Operations.

The Upjohn Company recently extended its scientific resources to the veterinary field in the organization of a Veterinary Research and Development Department. *Dr. Jack K. Dale*, a pharmacist in this new department, was an author, with *Sven J. Rundman* of the Product Research and Development Department, of the paper appearing in the July issue, page 421, of THIS JOURNAL. . . .*Dr. Jack T. Bryan*, a former Associate Professor of Pharmacy at Howard College, Birmingham, Ala., has joined the new Veterinary Research and Development Department as a Research Associate.

Warner-Chilcott Laboratories—*Dr. Leonard A. Scheele*, President, recently announced the appointment of *Dr. Theodore I. Fand* as Technical Director of Product Development. Dr. Fand had been associated with the former Nepera-Anahist Laboratories.

Weco Products Company—*R. V. Conners*, former Manager of Products Development, has been made Vice President and General Manager of Columbus Laboratories, the new Weco subsidiary organization.

Whitehall Pharmacal Company—*Kenneth A. Bonham*, the new company President, has announced the promotion to Vice President of *William L. Haddad*, former Assistant Secretary, and of *Dulany S. Smith* who recently joined the company as Director of Brand Managers.

Winthrop Laboratories—*Harry F. O'Brien* has been made Assistant Secretary. A member of the Winthrop staff since 1937, he graduated from the Albany College of Pharmacy and took postgraduate work at New York University. . . .*Catherine H. Roth*, M.D., has been appointed Associate Medical Director. The editor of a book on cardiovascular diseases, she was formerly in charge of medical educational services and medical advertising for Merck Sharp & Dohme, International.

INTERNATIONAL

Canada—The recent Fourth Canadian Conference on Pharmaceutical Research brought some 80 Canadian, U.S., French and English research workers to the University of Montreal campus to hear 16 papers ranging from organic synthesis to pharmaceutical manufacturing techniques. . . . *Douglas G. Parizeau* has been appointed to the newly created post of Sales Manager for Arner Co., Ltd., Fort Erie, Ontario.

Israel—*Dr. Ivor Griffith*, President of the Philadelphia College of Pharmacy and Science, is now making an extensive tour of Israel and conferring with the Board of Regents of Hebrew University of Jerusalem on the establishment of the new School of Pharmacy on the Givat Ram campus. Dr. Griffith is the North American chairman of a campaign to raise $1,000,000 for the new School. . . . *William Labow*, Canadian campaign chairman, and *Wilfred Isaacson*, vice chairman, recently announced the campaign officers who will aid in raising $100,000 in Canada for the critically needed School of Pharmacy.

Japan—The Parke-Davis distributor in Tokyo, Sankyo Co., Ltd., recently donated 3,000 doses of Chloromycetin and other medicines to aid in relief of the Kyushu flood victims.

COMING EVENTS

Society of Chemical Industry—Oct. 18, Waldorf-Astoria Hotel, New York.

National Wholesale Druggists' Association—Oct. 26–31, Bal Harbour (Miami), Fla.

4th Pan American Congress of Pharmacy and Biochemistry—Nov. 3–9, Mayflower Hotel, Washington, D.C.

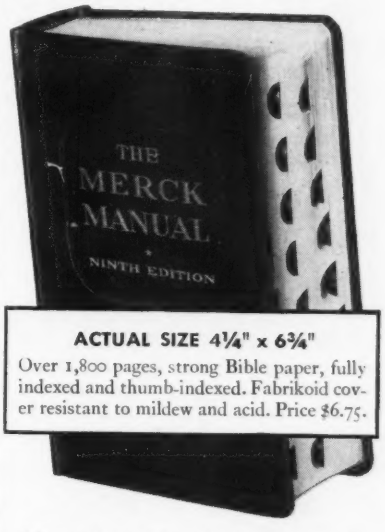
House of Delegates, AMERICAN PHARMACEUTICAL ASSN.—Nov. 9–10, Washington, D.C.

Veterans Day—Nov. 11.

American Public Health Association—Nov. 11–15, Cleveland, O.

Now Completely Revised
Expanded by
Hundreds of Pages

New Ninth Edition of
THE
MERCK
MANUAL
OF DIAGNOSIS AND THERAPY



ACTUAL SIZE 4¼" x 6¾"
Over 1,800 pages, strong Bible paper, fully indexed and thumb-indexed. Fabrikoid cover resistant to mildew and acid. Price $6.75.

New edition of world-famous medical reference book keeps pace with recent advances in medicine and pharmacy—presents up-to-the-minute facts on steroids, antibiotics, "tranquilizing" drugs and other vital therapeutic compounds—contains 378 chapters with full coverage of diseases and symptoms—provides 1,600 prescriptions geared to today's medicine.

ORDER NOW ON APPROVAL

MERCK & CO., INC. JP-10
Rahway, N. J.

Please send, on approval, a copy of the new ninth edition of THE MERCK MANUAL. If not satisfied, I will return the book within 30 days at your expense for full refund or cancellation.

☐ Check for $6.75 enclosed. I save 40¢ handling charge.
☐ Bill me for $6.75 plus 40¢ handling charge.

PRINT NAME AND ADDRESS

BRANCHES

To all students enrolled in our pharmacy colleges today, President Joseph B. Burt of the AMERICAN PHARMACEUTICAL ASSOCIATION extends, on behalf of the ASSOCIATION, our warmest welcome. We want all students of Pharmacy to feel that they are not alone as they move toward their goal; a companion who will remain at their side throughout their professional lives is the AMERICAN PHARMACEUTICAL ASSOCIATION which, for 105 years has helped pharmacists to maintain their professional status. The ASSOCIATION is always willing and able to offer its services to pharmacy students through its Student Branches. These Branches are found in all of the 76 accredited Colleges of Pharmacy and have been placed there for the purpose of enabling pharmacy students to become a part of the APhA from the very beginning of their professional careers.

Besides the Student Branches, the APhA maintains Local Branches throughout the country. Through the voice of these organizations, members can be among the most dynamic spokesmen of the APhA in expressing their points of view to their respective communities regarding the healing arts. A careful perusal of the resolutions adopted at the New York Convention will point up numerous topics for programming monthly branch meetings. The best means to disseminate the opinions of the Branches on a nationwide basis is through the APhA's monthly organ, the JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION. The JOURNAL editors are always ready to receive the announcements and reports of Branch meetings. Any Branch activities, including election of officers, reports of meetings, agenda for future meetings, speakers and speeches, local activity, and all other action pertinent to the ASSOCIATION are welcomed for publication in THE JOURNAL.

The editorial offices necessarily have certain restrictions and deadlines which can quite easily be met with little effort on your part. Please keep the following points in mind when forwarding articles for publication. Make certain that all names and dates are complete. Material must be timely to be of value. If you elect new officers, or sponsor a civic function, mail the story in immediately. Put your items in the same form as they appear in the "Branches" section of THIS JOURNAL. Deadline for copy is the 10th of the month. For example, if you wanted your story printed in the December issue, the copy would have to be in the Office of the Secretary of the APhA not later than November 10. Address all copy to The Secretary, AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Ave., N.W., Washington 7, D.C. The "Branches" section of the JOURNAL belongs to you. Use it to your best advantage. We are looking forward to receiving your reports and sharing them with 40,000 other JOURNAL readers.

LOCAL BRANCHES

Philadelphia Branch—The Branch has elected the following officers for 1957–58: *John Lynch*, President; *Earl Kimes*, Vice President; *Walter F. Charnicki*, Secretary; and *William Madison*, Treasurer.

Puget Sound Branch—Plans have been made for a new merit award to be presented to the practicing pharmacist who has made the outstanding contribution to the pharmaceutical profession during the past year. Nominations for this honor are now being received and the plaque will be awarded at the Branch's annual Pharmacy Week Banquet in October.

STUDENT BRANCHES

Columbia University—The Branch reports the election of officers for 1957–58 as follows: *Gerald Donaty*, President; *Herbert Sinnreich*, Vice President; *Sandro A. Walsh*, Secretary; and *Robert J. Nessel*, Treasurer. *Professor William Weingold* continues to serve as Faculty Advisor for the Branch.

Oregon State College—Officers of the Student Branch for the 1957–58 school year are: *Robert J. Peterson*, President; *Nancy Ragan*, Vice President; *Nan Steele*, Secretary; *Carl Deming*, Treasurer; and *Carol Ann King*, Historian. *Professor Herman G. Forslund* is Faculty Advisor of the Branch.

Rutgers University—Student Branch Officers for the year 1957–58 will be *Emanuel Newmark*, President; *David Schachat*, Vice President; *Emily Lyko*, Secretary; and *Stephen J. Swihura*, Treasurer.

Southwestern State College—Recently elected Branch officers include: *Larry Taylor*, President; *Leroy Smith*, Vice President; *Patsy Freeman*, Secretary; *A. W. Salisbury*, Treasurer; and *Clifford Meece*, Historian-Reporter.

University of Cincinnati—The Branch reports that the following officers have been elected to serve during 1957–58: *John C. Flohr*, President; *Donald E. Falconi*, Vice President; and *Jack C. Pickett*, Secretary-Treasurer.

University of Maryland—*Dean E. Leavitt*, new Faculty Advisor for the Student Branch, announces the election of the following Branch officers to serve during the 1957–58 scholastic year: *Gerald Cohen*, President; *Stanley Becker*, Vice President; and *Carl Caplan*, Secretary. *Dr. Frank Slama* continues to serve as Branch Treasurer.

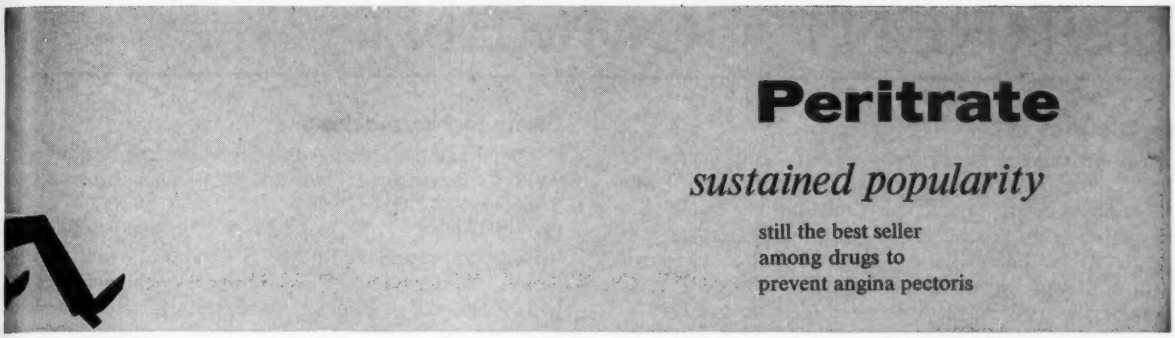
University of Oklahoma—The Student Branch at Oklahoma will sponsor National Pharmacy Day this year. To be held at the College of Pharmacy on October 9, the program consists of several displays by pharmaceutical manufacturers as well as a number of formal sections for discussions. Representatives from pharmaceutical manufacturers will be present to answer questions concerning the new products on display.

University of Texas—*Dr. Charles O. Wilson* has been appointed Faculty Advisor of the University of Texas Student Branch, replacing *Dr. David M. Stuart*, who has joined the teaching staff of the School of Pharmacy at Oregon State College.

Career Opportunities Forecast in
PHARMACY

Young men and women now foresee successful and interesting careers in pharmaceutical practice and industry through courses of study at this oldest yet most modern institution of its kind in the Americas. B.Sc., M.Sc. and D.Sc. degree courses. Also Schools of Chemistry, Biology and Bacteriology. Applications now considered after 3½ years high school, acceptance depends upon successful completion of course. Write for free catalog.

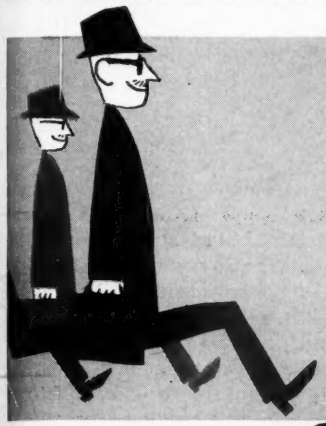
Philadelphia College
OF PHARMACY AND SCIENCE
43rd St., Woodland and Kingsessing Avenues, Philadelphia 4, Penna. *Founded in 1821.*



Peritrate

sustained popularity

still the best seller
among drugs to
prevent angina pectoris

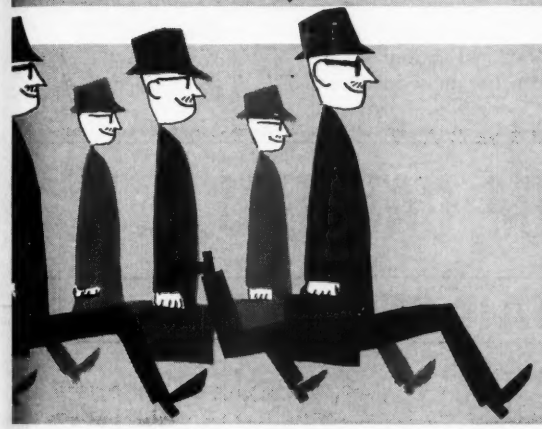


Peritrate

sustained profits

consistently one of
your leading
prescription specialties

and now

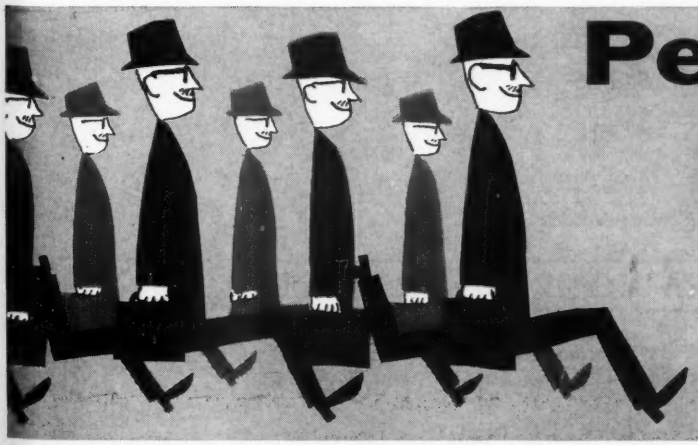


Peritrate

sustained action

'round-the-clock protection
against angina with only
two tablets a day.

new



Peritrate®

BRAND OF PENTAERYTHRITOL TETRANITRATE

SA Sustained Action

Peritrate Sustained Action is
being heavily detailed and promoted.
Order now . . . for even more
Peritrate business in 1957

Size	Your Cost	M. F. T.
100	$ 7.50	$12.50
500	30.00	50.00

WARNER-CHILCOTT 100 YEARS OF SERVICE TO THE MEDICAL PROFESSION

CURRENT COMMENT

Death from TV

A 3-year-old girl apparently went to sleep in front of a TV set as her family watched a baseball game. Some 20 minutes later, the mother reached down to pick her daughter up to put her in bed and discovered she was dead. Only then did she discover burns on the right arm and right leg of the youngster and all efforts to administer artificial respiration were of no avail.

Investigation disclosed that the TV set, a Sears Silvertone 1954 model, chassis No. 13208400, had a short circuit through which 155 volts were feeding from the chassis through a loose metal bolt to the metal stand on which the set was resting. Apparently the young girl touched a leg of the stand and a metal register in the floor.

Rabies in a Bat

A case of rabies in a bat has been reported by Dr. F. R. Hassler, Oklahoma State Department of Health. The bat, with 2 young attached to her, was found on the ground by an 8-year-old boy. The child attempted to pick it up and was bitten on one finger. The mother reported the bat was unable to fly and it made a hissing sound. The bat was placed in a wire cage for observation and died approximately 28 hours later. During this time she attacked one of her young viciously and tore it to pieces. Laboratory tests showed the bat to be rabid.

Loans to Pharmacies

The Small Business Administration has announced an 85% increase in loans to small firms from 1,915 loans ($81,977,000) during fiscal 1956 to 3,536 loans ($159,095,000) during fiscal 1957. The following loans were approved by the SBA during June, 1957 alone: Montgomery Hills Pharmacy, Silver Spring, Md. ($30,000); Henley C. Suddreth drug stores, Kinston, N.C. ($50,000); Bynum Drug Co., Bynum, Ala. ($10,000); Attwood and Rogers, Jacksonville, Fla. ($20,000); and Sterling E. Anderson drug store, Houston, Tex. ($6,000).

Tools of the Apothecary

The articles by George Griffenhagen which have appeared in the department "Tools of the Apothecary" serially in THIS JOURNAL have been bound into a pamphlet. In one volume appear essays on the history of the mortar and pestle, pharmaceutical balances, weights, suppository molds, pill tiles, spatulas, filtration equipment, drug mills, capsule fillers, and tablet presses. A selected bibliography is appended to each chapter, and the text is supplemented with 77 illustrations. "Tools of the Apothecary" may be obtained from the AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, N.W., Washington 7, D.C., at 50¢ per copy postpaid.

VASELINE® PETROLATUM GAUZE U. S. P.

SUGGESTED RETAIL PRICES

Stock No.	Size	Box of 6
3687	1" x 36"	$1.64
3657	3" x 36"	2.14
3677	6" x 36"	3.64
3667	3" x 18"	1.34
3697	½" x 72"	2.94

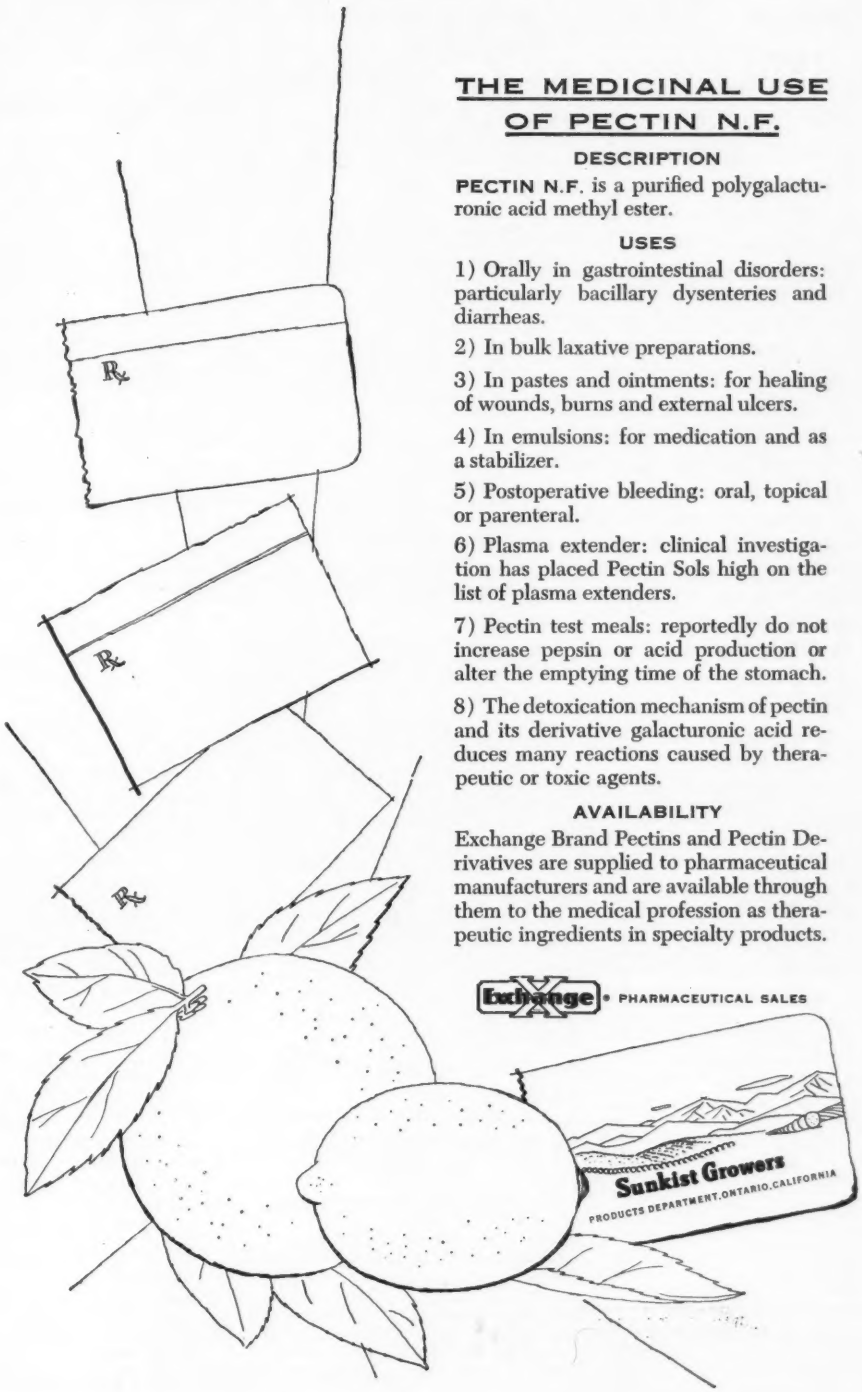
(Selvage-Edged Packing)

ORDER FROM YOUR WHOLESALER

VASELINE is a Registered Trademark of

CHESEBROUGH-POND'S INC.

NEW YORK 17, N.Y.



THE MEDICINAL USE OF PECTIN N.F.

DESCRIPTION

PECTIN N.F. is a purified polygalacturonic acid methyl ester.

USES

1) Orally in gastrointestinal disorders: particularly bacillary dysenteries and diarrheas.

2) In bulk laxative preparations.

3) In pastes and ointments: for healing of wounds, burns and external ulcers.

4) In emulsions: for medication and as a stabilizer.

5) Postoperative bleeding: oral, topical or parenteral.

6) Plasma extender: clinical investigation has placed Pectin Sols high on the list of plasma extenders.

7) Pectin test meals: reportedly do not increase pepsin or acid production or alter the emptying time of the stomach.

8) The detoxication mechanism of pectin and its derivative galacturonic acid reduces many reactions caused by therapeutic or toxic agents.

AVAILABILITY

Exchange Brand Pectins and Pectin Derivatives are supplied to pharmaceutical manufacturers and are available through them to the medical profession as therapeutic ingredients in specialty products.

Exchange • PHARMACEUTICAL SALES

LITERATURE OF PHARMACY

ANSWERS: WHO MAKES WHAT

AMERICAN DRUG INDEX

1957

By Charles O. Wilson, Ph.D., and T. E. Jones, M.S.

Up to the minute. Indexes and cross-indexes over 14,000 drug preparations. All you need know is the generic, chemical or trade name—*any one*—and you can get complete identification instantly. In *seconds* you can identify a brand name with its generic name; find a drug or drug combination when only the major ingredient is known; learn the manufacturer, dosage forms, strengths, wholesale units, usual dose and indications for use. The American Drug Index can save you hours of valuable time...will speed up your service to physicians.

650 Pages Over 80 Tables $5.00

THE NATIONAL FORMULARY X

Prepared by the Committee on National Formulary under the supervision of the Council by authority of the AMERICAN PHARMACEUTICAL ASSOCIATION.

Official from December 15, 1955

Provides specifications for the procurement of drugs used in dispensing, prescription compounding and manufacturing, and supplies formulas and working conditions for the preparation of dosage forms. The admission of drugs to this edition has been based on therapeutic value and upon the extent of use. Among many new features are: a section on general information; specifications for the disintegration time of coated, buccal, and sublingual tablets; weight variation standards for the content of dry-filled capsules, and for solubility of hypodermic tablets.

●

Published by The American Pharmaceutical Association, Distributed for the Association by J. B. Lippincott Company

●

867 Pages Tenth Edition $9.00

PUBLIC RELATIONS FOR THE PHARMACIST

By William H. Hull, M.A.

A complete "how-to" of better public relations for every pharmacist — an explicit, workable program designed to improve your business and appreciably increase your sales.

132 Pages 23 Figures $4.50

TEXTBOOK OF PHARMACEUTICAL COMPOUNDING AND DISPENSING

Edited by Rufus A. Lyman, M.D. and Joseph B. Sprowls, Ph.D. Consulting Editor, George Urdang, Ph.G., D.Sc. Nat., Sc.D. (h.c.)

Includes chapters on such specialties as parental preparations, tablet manufacture, hospital pharmacy and dental pharmacy. Complete and up to date.

477 Pages 107 Figures and 61 Tables
2nd Edition, 1955 $9.75

HISTORY OF PHARMACY:

A GUIDE AND A SURVEY—2nd Edition

By Edward Kremers, Ph.G., Ph.M., Ph.D., Sc.D. and George Urdang, Ph.G., D.Sc. Nat., Sc.D. (h.c.)

A comprehensive record of the progress of pharmacy. Covers old world backgrounds, growth in Europe and in the United States, and discoveries and inventions.

622 Pages 30 Illustrations $7.50

AMERICAN PHARMACY:

TEXTBOOK OF PHARMACEUTICAL PRINCIPLES, PROCESSES AND PREPARATIONS.

Edited by Rufus A. Lyman, M.D. and Joseph B. Sprowls, Ph.D. Consulting Editor, George Urdang, Ph.G., D.Sc. Nat., Sc.D. (h.c.)

Authoritative, up-to-date, and has been revised in accordance with the latest editions of *United States Pharmacopeia, National Formulary and New and Nonofficial Remedies*. In two parts: Fundamental Principles and Processes, and Pharmaceutical Preparations.

478 Pages 174 Figures and 37 Tables
4th Edition, 1955 $9.75

NEW AND NONOFFICIAL REMEDIES

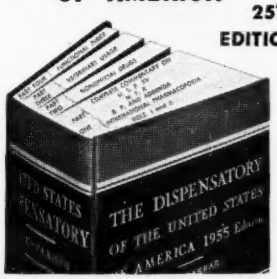
1957 Edition

A single source for *all essential information on new drugs* — official and nonofficial — evaluated by the Council on Pharmacy and Chemistry of the A.M.A. Quick reference to composition, dosage, indications, contraindications, detail of use, etc. Trade names in new type face for quick reference. 42 new monographs in the 1957 edition. N.N.R. is a *standard* authority.

560 Pages $3.35

THE DISPENSATORY OF THE UNITED STATES OF AMERICA

25TH EDITION



Edited by Arthur Osol, Ph.G., B.S., M.S., Ph.D. and George E. Farrar, Jr., B.S., M.D., F.A.C.P. with 5 Associate Editors and 13 Distinguished Contributors.

Serving the pharmaceutical and medical professions for 122 years — this 25th edition is completely up to date — with more new features than ever before.

U.S.D. includes every drug and chemical used in medicine. The only authoritative commentary of its kind.

In FOUR PARTS for easier reference.

PART ONE — a complete commentary on drugs recognized by the United States Pharmacopeia XV, the National Formulary X, the British Pharmacopoeia, and the International Pharmacopoeia, Vols. 1 and 2; also includes complete and detailed information on antibiotics, hormones and steroids. Individual monographs, alphabetical by English title, cover formula, trademark, suppliers, comparisons with related drugs, methods of synthesis, summary of standards and tests, uses, pharmacological actions, etc. . . . all the information you need.

PART TWO—nonofficial drugs—medicinal agents not recognized in the official compendia which provide basis for inclusion in PART ONE.

PART THREE — veterinary usage; enlarged new drugs and dosage information.

PART FOUR—thorough functional index.

2139 Pages $25.00

DURABLE LIBRARY BUCKRAM

ORDER THROUGH YOUR WHOLESALER or from the publisher **J. B. LIPPINCOTT COMPANY, Philadelphia 5, Pa.**

New!

NEO-SYNEPHRINE® COMPOUND Cold Tablets

MORE COMPLETE CONTROL of common cold syndrome

100 TABLETS
N-780
NEO-SYNEPHRINE® COMPOUND
Cold Tablets
Each tablet contains:
Neo-Synephrine HCl (brand of phenylephrine HCl) 5 mg.
Thenfadil® (brand of thenyldiamine) HCl 7.5 mg.
N-acetyl-p-aminophenol 150 mg.
Caffeine 15 mg.
For the relief of nasal stuffiness, indisposition, headache and the other aches and pains of colds. Helps to reduce nasal discharge (running nose) and fever (antipyretic effect).
Winthrop LABORATORIES
NEW YORK 18, N. Y.

This orally effective decongestant, analgesic, antipyretic and antihistaminic tablet is a new addition to the famous Neo-Synephrine line which will be intensively promoted to physicians in your area.

Order Today!
Be prepared for the coming "COLD" season

BOTTLES OF 100 TABLETS

NEO-SYNEPHRINE COMPOUND Cold Tablets

Winthrop LABORATORIES
1450 Broadway, New York 18, N. Y.
PHARMACEUTICALS IN DAILY DEMAND
ETHICALLY ADVERTISED AND DETAILED

Neo-Synephrine (brand of phenylephrine) and Thenfadil (brand of thenyldiamine), trademarks reg. U.S. Pat. Off.

PAN AMERICAN CONGRESS TEMPORARY SECTION CHAIRMEN

Twelve outstanding pharmacists, each from a different country, were named Temporary Section Chairmen of the Fourth Pan American Congress of Pharmacy and Biochemistry to be held in Washington, D.C., on November 3 to 9, inclusive.

The countries providing the 12 section chairmen are Argentina, Brazil, Canada, Chile, Cuba, Ecuador, Honduras, Mexico, Nicaragua, Panama, Peru, and Venezuela. It was explained by *Dr. Robert A. Hardt*, Chairman of the Congress Organizing Committee, that selection of Temporary Section Chairmen was made recently so that these outstanding pharmacists from the various American countries may assist in the development of an interesting, fruitful section program.

The temporary officials and their sections are as follows:

Dr. Francisco Cignoli, of Rosario, Argentina, Chairman; *Dr. Glenn Sonnedecker*, of Madison, Wisc., Secretary; Section on Historical Pharmacy and Historical Biochemistry.

Dr. Suzana Menendez, of Cuba, Chairman; *Mr. Grover C. Bowles, Jr.*, of Memphis, Tenn., Secretary; Section on Hospital Pharmacy.

Dr. Rafael Illescas F., of Mexico City, Mexico, Chairman; *Mr. Adolph Tiesler*, of Pearl River, N.Y., Secretary; Section on Manufacturing Pharmacy.

Dr. Antonio Nunes Lago, of Rio de Janeiro, Brazil, Chairman; *Mr. Dan Rennick*, of New York, N.Y., Secretary; Section on Pharmaceutical and Biochemical Journal Editors.

Dr. Alberto Lacayo Lacayo, of Managua, Nicaragua, Chairman; *Dr. George P. Hager, Jr.*, Minneapolis, Minn., Secretary; Section on Pharmaceutical Chemistry and Biochemistry.

Professor Juan Perello Puig, of Concepcion, Chile, Chairman; *Dr. Melvin Green*, of Chicago, Ill., Secretary; Section on Pharmaceutical Education.

Dr. Miguel Andonie, of Tegucigalpa, Honduras, Chairman; *Dr. Paul C. Olsen*, of Brooklyn, N.Y., Secretary; Section on Pharmaceutical Economics and Management.

Dr. Julio Lopez Guillen, of Lima, Peru, Chairman; *Dr. Heber W. Youngken, Jr.*, of Kingston, R.I., Secretary; Section on Pharmacognosy, Phytochemistry and Botany.

Dr. Reynaldo Navarrete Estrada, of Guayaquil, Ecuador, Chairman; *Dr. James C. Munch*, of Upper Darby, Pa., Secretary; Section on Pharmacology.

Dean A. W. Matthews, of Vancouver, British Columbia, Canada, Chairman; *Dr. Lloyd C. Miller*, of New York City, Secretary; Section on Pharmacopoeias and Formularies.

Dr. Nestor Oropeza, of Caracas, Venezuela, Chairman; *Dr. Patrick H. Costello*, of Chicago, Ill., Secretary; Section on Pharmacy Laws and Ethics.

Dr. Laurentino Arjona, of Panama City, Panama, Chairman; *Mr. Robert E. Abrams*, of Philadelphia, Pa., Secretary; Section on Practical Pharmacy.

APhA OFFICERS FOR 1958–59

Officers of the AMERICAN PHARMACEUTICAL ASSOCIATION are elected by a mail ballot participated in by all members in good standing. The votes are counted by a Board of Canvassers appointed by the President, and the results are certified to the Secretary in due course.

The Board of Canvassers met on September 13 and 14, 1957 at Washington, D.C., to count the votes cast in the election of officers for installation at the 1958 Convention. The Board of Canvassers included Harry C. Zeisig, Chairman, William J. Dixon, and James O. Hubbard, Jr.

Next President a Retail Pharmacist

The following officers were elected and will be installed at the annual convention in Los Angeles, Calif., the week of April 20, 1958:

President-Elect
Louis J. Fischl of Oakland, Calif.—practicing pharmacist.

First Vice President-Elect
Stephen Wilson of Detroit, Mich.—pharmaceutical educator and dean.

Second Vice President-Elect
Howell R. Jordan of Austin, Tex.—practicing pharmacist.

Members-Elect of the Council

The following have been elected for a term of three years:

Troy C. Daniels of San Francisco, Calif.—pharmaceutical educator and dean.
J. H. F. Dunning of Baltimore, Md.—manufacturing pharmacist.
John A. MacCartney of Detroit, Mich.—manufacturing pharmacist.

Officers Now Serving

The present officers of the AMERICAN PHARMACEUTICAL ASSOCIATION elected by mail ballot will continue to function through the Los Angeles Convention the week of April 20, 1958. These officers are:

President: Joseph B. Burt, Lincoln, Neb.
First Vice President: J. Warren Lansdowne, Indianapolis, Ind.
Second Vice President: Leroy A. Weidle, Sr., St. Louis, Mo.

The Honorary President is elected annually, and the Secretary and the Treasurer are elected triennually by the House of Delegates.

Honorary President: Frank O. Taylor, South Fort Mitchell, Ky.
Secretary: Robert P. Fischelis, Washington, D.C.
Treasurer: Hugo H. Schaefer, Brooklyn, N.Y.

AMERICAN CHEMICAL SOCIETY MEETING

The 132nd meeting of the American Chemical Society in New York, September 8–13, was attended by over 15,000 registrants. The sessions of the 22 different ACS divisions were held in 10 hotels and meeting attendances were expedited by keeping related divisions in the same hotel or nearby hotels.

ACS President Roger J. Williams reported that he and his associates in alcoholism research "believe we have found the biochemical basis of alcoholic craving and, better yet, the way it can be prevented or abolished." They relate the condition to the nutrition and metabolism of the hypothalamus of the brain, and believe that potential alcoholics may be identified while they are still children. These children could be saved by nutritional adjustment.

A method for isolating antibodies was reported by Dr. Alec Sehon of McGill University. Antibodies to ragweed allergen were isolated from immune serum by percolating the serum through a small column of resin-like polystyrene which had been prepared by fixing the allergen on the polystyrene through azo bonds. The ant bodies separated and held by the fixed allergen could then be eluted from the column by dissociation under acid conditions.

Steps being taken by FDA to eliminate penicillin from milk supplies were described by Dr. D. C. Grove. They include: education of farmers not to sell milk from cows treated for mastitis with antibiotics for 3 days following the last treatment, and limiting the dosage for mastitis to a maximum of 100,000 units of penicillin. No danger exists from poultry dipped in weak solutions of chlortetracycline or oxytetracycline as preservatives since any possible residues are destroyed by cooking.

Among many other interesting papers were reports on studies seeking new synthetic central depressants as tranquilizers, new local anesthetics, and the isolation of hallucination producing alkaloids from two South Amer can plants, *Banisteria caapi* and *Prestonia amazonicum*. Much interest was shown in the cancer symposiums, particularly the relations between viruses and cancer. E. H. Ahrens, Jr., reporting on "Dietary Fat and Atherosclerosis," cautioned against hasty conclusions, and noted that radical changes in dietary habits should not be recommended to the public but patients with existent or threatening arteriosclerosis may be advised to eat higher proportions of unsaturated fats.

"Net" profits with these steady sellers

S. T. 37®

Essentially non-toxic, multiple-use antiseptic. Harmless even if swallowed.

SUCRETS®

A soothing lozenge for speedy throat relief.

TYROLARIS®

The first antibiotic mouthwash. Cleans, refreshes.

TRACINETS®

Antibiotic troches with local anesthetic action.

MSD

MERCK SHARP & DOHME

DIVISION OF MERCK & CO., INC., PHILADELPHIA 1, PA.

Dr. Urdang Retires

The American Institute of the History of Pharmacy recently came under new leadership when Dr. George Urdang was succeeded, as Director, by Dr. Glenn Sonnedecker of the University of Wisconsin faculty.

At the meeting of the Institute's Council in May, Dr. Urdang had asked to be relieved of active direction of the organization after his 75th birthday, for reasons of age and health, according to Dean A. H. Uhl, chairman of the Council, who said:

"Dr. Urdang has served the Institute with a remarkable sense of dedication since the founding 16 years ago. It has been largely his ability that developed the American Institute of the History of Pharmacy into a cultural center serving American pharmacy uniquely, but also commanding respect internationally. In naming Dr. Urdang as Director-Emeritus the Council hopes that the Institute may long continue to have the benefit of his advice and guidance."

Biography

Dr. George Urdang was born in Tilsit (Germany) on June 13, 1882. He went through the required education of German "Apotheker," studied at the University of Leipzig under the well known pharmaceutical chemist Ernst Beckmann and the botanist Wilhelm Pfeffer and passed his examination with the highest mark. Besides his professional studies, he took up the study of history, philosophy and literature. For 9 years he was the owner of a small-town pharmacy (Rosenberg, West Prussia), making himself known during this time as an author of articles in pharmaceutical and other journals. In 1919 he was appointed Editor of the *Pharmazeutische Zeitung* (published by Julius Springer, Berlin), one of the best known pharmaceutical journals on the European continent. This position he held until the political uproar in Germany forced his resignation.

Besides his editorial work, Dr. Urdang took up graduate study in history of science, pharmaceutical chemistry, and economics at the Universities of Berlin and Halle-Wittenberg, earning his Doctor of Natural Science degree at Halle-Wittenberg "with distinction." He was the first in Germany to receive a Doctor's degree with pharmacy as a major on the basis of a pharmaceutico-historical doctor thesis; and he was the only one to receive his degree under the world famous historian of science, E. von Lippmann, author of the most profound history of alchemy ever written.

In 1926 Urdang founded, together with four friends, the first Society of the History of Pharmacy intended to become an international center in the field concerned. He was the director of this society until 1934.

Urdang holds, furthermore, the honorary corresponding membership of the Austrian Pharmaceutical Society (1928) and the honorary membership of the AMERICAN PHARMACEUTICAL ASSOCIATION (1932).

After his arrival in the United States of America in 1938, Urdang took the last-year course in the Brooklyn College of Pharmacy and passed the College examination in May 1939 and the New York State Board of Pharmacy examination in June of the same year.

In January, 1941 the American Institute of the History of Pharmacy was founded with Urdang as its Director, a position he continues to hold. Urdang has been a member of the bibliography committee of the American Association of the History of Medicine since 1941, historian of the American Association of Colleges of Pharmacy since 1942, a member of the Committee on Publications for 1947 and 1948 of the History of Science Society (after having been a member of the Society Council for the period 1932–1946), a "consulting editor" of the *Journal of the History of Medicine and Allied Sciences* (since 1947), and of "Chymia," Annual Studies in the History of Chemisty (since 1947) an "associate editor" of Isis, the official journal of the History of Science Society, and a contributor to the United States Quarterly Book list, issued by the Library of Congress (since 1947). Urdang was appointed an "Honorary Consultant to the U. S. Army Medical Library" in 1948.

He was given an Honorary Doctor of Science degree by the Philadelphia College of Pharmacy and Science in 1946. In 1947 he became a Fellow of the American Association for the Advancement of Science. In 1948 the Brazilian Society for the History of Medicine appointed Urdang a corresponding member and in 1950 he was made an honorary member by the Brazilian National Academy of Pharmacy. Likewise in 1950 he was made an honorary member of the Peruvian Society of the History of Pharmacy.

In the fall of 1947 the University of Wisconsin created a chair for the History of Pharmacy and appointed Urdang the first occupant of this chair with the rank of full professor.

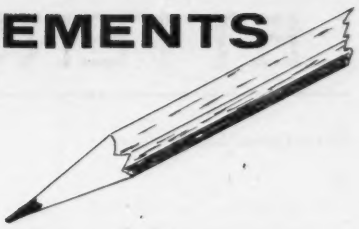
GRADUATE PROGRAMS IN PHARMACY 1957–58

The following table is being published in response to requests that a complete summary of graduate programs in accredited Colleges of Pharmacy be made available instead of the incomplete listing appearing on page 530 of the September Issue of THIS JOURNAL. This information was compiled by the American Association of the Colleges of Pharmacy and supplied by the American Council on Pharmaceutical Education.

School	Pharmacy		Pharm. Chem.		Pharmacology		Pharmacognosy		Pharm. Admin.		Hospital Pharmacy	
	MS	*PhD*	*MS*	*PhD*	*MS*	*PhD*	*MS*	*PhD*	*MS*	*PhD*	*MS*	*PhD*
Ala. Polytech.	X		X		X		X					
U. Arizona	X		X		X		X		X			
U. California			X	X	X	X						
U. So. Calif.	X	X	X	X	X	X	X				X	
U. Colorado	X	X	X	X	X	X			X	X		
U. Connecticut	X	X	X	X	X	X	X	X			X	
George Washington U.					X	X			X	X		
U. Florida	X	X	X	X	X	X	X	X				
U. Georgia	X		X		X				X			
U. Illinois	X		X	X	X	X	X	X			X	
Butler U.	X		X		X							
Purdue U.	X	X	X	X	X	X	X	X	X		X	
Drake U.					X							
State U. Iowa	X	X	X	X	X	X			X		X	
U. Kansas	X		X	X	X		X		X			
U. Maryland	X	X	X	X	X	X	X				X	
Mass. C. of P.	X	X	X	X	X		X	X			X	
U. Michigan	X	X	X	X	X	X			X	X	X	
Wayne U.	X		X		X		X				X	
U. Minnesota			X	X	X	X	X	X	X	X		
U. Mississippi	X		X									
St. Louis C. of P.	X										X	
U. Kansas City	X		X		X		X					
Montana St. U.	X		X		X		X					
Creighton U.					X							
U. Nebraska	X	X	X	X	X	X	X	X			X	
Rutgers U.	X		X		X							
Brooklyn C. of P.									X			
Columbia U.	X		X		X		X					
U. Buffalo	X		X	X	X	X			X		X	
U. No. Carolina	X	X	X	X	X		X	X				
No. Dakota	X		X		X				X		X	
Ohio State U.	X	X	X	X	X	X	X	X	X	X	X	
U. Oklahoma	X		X		X		X					
Oregon St. Coll.	X	X	X	X	X	X	X	X				
U. of Philippines	X	X	X	X			X	X				
Duquesne U.	X		X		X		X					
Phila. C. of P.&S.	X	X	X	X	X	X	X	X			X	
Temple U.	X		X		X						X	
U. Pittsburgh	X	X			X		X		X	X		
Med. C. S. Car.					X	X						
So. Dak. St. Col.			X		X							
U. Tennessee			X		X	X					X	
U. Houston	X		X		X		X				X	
U. Texas	X	X	X	X	X	X	X	X	X	X	X	
U. Utah	X	X	X	X	X	X	X	X	X			
Med. Coll. Va.			X	X		X					X	
St. Coll. Wash	X	X	X	X	X	X	X	X	X			
U. Washington	X	X	X	X	X	X	X	X				
U. Wisconsin	X	X	X	X	X	X			X	X		

CHECK YOUR REQUIREMENTS

of these important books



✓ Remington's PRACTICE OF PHARMACY

The most comprehensive and up-to-date text on all phases of pharmaceutical procedure and theory. An encyclopedia of pharmaceutical, medical, and chemical knowledge in one volume. 100 big chapters contain the last word on practically every subject important to pharmacists. It features an unusually complete index, providing the reader with instant access to any of the thousands of subjects covered.

Editors: *Eric W. Martin and E. Fullerton Cook*

Associate Editors: *E. E. Leuallen, Arthur Osol, Linwood F. Tice, C. T. Van Meter*
with **200 assistant editors and contributors.**
1724 pages eleventh edition 1956 $20

✓ U. S. P. XV

The Fifteenth Revision of the United States Pharmacopoeia is a valuable reference volume for all pharmacists and pharmacy students. Important new additions and presentation of the text in a more useful arrangement make this new revision of vital importance in every pharmacy and classroom.

1232 pages fifteenth revision 1955 $10

✓ Rutin and Related Flavonoids

Since its first isolation, the drug rutin has been the subject of many reports. Here in one volume, is presented the findings of researchers all over the world, together with clinical reports on the effect of flavonoids in various applications.

by *Griffith, Krewson, and Naghski*

290 pages 44 illustrations $7.50

✓ Discovery of the Elements

Whether you are a teacher or a student, a seasoned pharmacist or chemist, or a layman reading for enjoyment only, "Discovery of the Elements" is a book you must not miss. From ancient times through the alchemical era, to the present discoveries by atomic bombardment, the elements are isolated, with the reader sharing the thrill of discovery.

by *Mary Elvira Weeks, with Henry M. Leicester*

920 pages sixth edition 386 illustrations $10

Order now from:

MACK Publishing Co., Easton, Pa.

Please send me the copies of the books that I have listed below. I understand they will be shipped post-paid in the United States.

.... Copies, Remington, eleventh ed. $.....
.... Copies, U. S. P. XV .....
.... Copies, Rutin .....
.... Copies, Discovery of Elements .....

Name.....

Address.....

City..... State.....

Enclosed is ☐ *check* ☐ *money order*

MACK *Publishing Company, Easton, Pa. • Technical Books*

LETTERS

Educational Shortage

Sir:

It certainly was refreshing to see Dean Kaufman's letter in the July issue [page 412], in which he expressed himself against Federal aid to education. Apparently, I had my economics courses by correspondence but I failed to see what we gain by sending a dollar to school by way of the U. S. Treasury which, incidentally, must keep a portion thereof. There are doubtless many reasons why the bill was recently defeated.

P. E. Carman
Executive Director of Research
S. E. Massengill Company
Bristol, Tenn.

Sir:

I would like to add my belated plaudits to those of others in regard to THE JOURNAL. You have improved it tremendously and have made it far more usable for the modern pharmacist in the field. This should make friends for the Association where it counts with the retail pharmacists.

While I am about it I would like to add a vigorous "amen" to Dean Kaufman's letter. . . . The whole issue of classrooms is a political one that is directed to the emotions of the public. The individual states have done an excellent job if one considers the projections of a few years ago.

Warren E. Weaver, Dean
School of Pharmacy
Medical College of Virginia
Richmond, Va.

Revolution in Pharmacy

Sir:

How can any retail pharmacist expect, or hope, to merit prestige if half or more of his store is littered with merchandise such as stockings, beer, pocketknives, swimming pools, underwear, and other such goods which have no righful place in a pharmacy? If he insists upon stocking these items, then he should expect no more esteem than is given to the clothier, the hardware man, or the toy salesman.... But, you say, it is impossible to exist economically solely as a pharmacist. Ah, what beautifully specious and fallacious arguments have been advanced in this direction!...the choice is his to make; change and thrive, or refuse...and observe the extinction of the retail pharmacist.

...I believe that the future, and the present, of a retail pharmacist lie in his becoming an advisor to the medical man.... Try to realize that the field of therapeutics has expanded as fast for the M.D.'s as it has for the pharmacist, and try to realize that they are less prepared to cope with many aspects of such an expansion than the pharmacy graduate is.... While a doctor may know what he wants the drug to do, he may not know, and often does not know, what drug will do this.

...You say that the tremendous output of new drugs has left you in confusion, and that it is impossible for you to make any sense of such a haphazard mass. I ask what attempts have you made to do so? How many of you have complete files on drugs, not only concerning their price, but also their pharmacological action, contraindications, suggested dosage, suggested therapeutic applications, information on how they are supplied and by whom, their advantages and disadvantages as compared with similar type drugs, etc.? ...Herein lies the future of Pharmacy.... A pharmacist performing the functions outlined above would...raise not only himself, but the profession of Pharmacy, to a deservingly high level. It will not be easy; diligence, patience, and hard work are prerequisites.

But where does this road lead? Can you pursue this path and exist economically? I think you can....It will mean that retail stores need be kept open only from 10:00 A.M. until 9:00 P.M., as a maximum, and closed on Sundays and holidays. It will also mean that you will be subject to call 24 hours a day. Such a function also requires a substantial amount of independent reading...I realize that such a system would force perhaps 50% of the present retail pharmacists out of business. But perhaps such an exodus is desirable....You who remain, however, will reap the harvest you have sown....

Eugene I. Snyder
Chicago, Illinois

Botanical Drugs

Sir:

May I express the appreciation of all of us at Meer Corporation for your editor's note . . . ["Herb Gatherer," July, 1957, page 412].

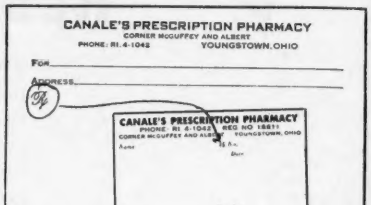
I would like to bring to your attention, and ask you to correct if you will, the address of our main office. [This] is located at 318 W. 46th Street, New York 36, N.Y. The address given in your note is that of our Laboratory, Research and Manufacturing Unit at North Bergen, N.J.

Arthur C. Curran, Sales Manager
Meer Corporation

Symbolism Repeated

Sir:

In reference to your article on page 528 in the PRACTICAL EDITION; I don't think the idea is very new, I've used this combination for almost 4 years as per sample below.



You might notify Rexall.

Benny Fontanarosa, R.Ph.
Youngstown, Ohio

New Drug Information

Sir:

I would like to highlight a recommendation made by Troy C. Daniels, Chairman of the House of Delegates, in which he said: "... to develop ways and means of making pertinent information on new drug products available to the pharmacists immediately prior to, or at the time of, their release."

The pharmacist, NOT the physician, should be first to be briefed on the new product, drug or dosage form! It is an established fact that the pharmacist of 1957 and in the years ahead, is looked upon as the CONSULTANT to the physician, hence, the information should be in his hands, where he has been given descriptive data BEFORE the detail man visits the physician.

The physician, I am sure, expects the available information from the pharmacy, for it is there he first calls to refresh his memory. Therefore, a change in the philosophy on the part of manufacturers is in order! Dr. Daniels further mentioned that in 1956 a total of 401 new prescription products 66 new dosage forms were introduced by the drug industry. . . How can a physician in his hectic daily practice retain information of this type? It is a herculean task and is. . .IMPOSSIBLE!

The objectives and statements of fact of the APhA convention are very important to the profession of Pharmacy Dr. Daniels' recommendation to the pharmaceutical manufacturers is of paramount importance.

F. Joseph Veneri
Oakhurst, N. J

EDITORIALS

Vigorous, farsighted leadership in pharmaceutical education is insuring that the destiny of Pharmacy as the key to human health will be fulfilled. Pharmaceutical educators have established long range goals and well ordered programs. They have also recognized the need for flexibility as well as determined action in meeting the rapidly changing demands being made upon them by the various facets of our profession. Accordingly, each year the pharmaceutical curricula are modified to meet the new challenges which are constantly arising.

The network of American Colleges of Pharmacy, so vital to our professional future, has developed concepts which have advanced pharmaceutical education during the past 75 years from the apprenticeship stage, through the trade school era, to the point where educational standards established at a high professional level are now being met from coast to coast. The Colleges have advanced to the extent that they provide undergraduate and advanced education in the very finest traditions of the health professions.

An attempt has been made in this issue of THE JOURNAL to demonstrate the breadth of scope and depth of vision encountered in Pharmaceutical Education today. We are grateful for the encouragement and help received from the Deans of the Colleges of Pharmacy in the United States and its Territories. We are very sorry that every one of the Colleges could not be given extensive coverage in both word and picture, but we have had to rely upon our Art Editor to select illustrations technically suitable for reproduction as engravings. Unfortunately, many of the excellent photographs which we received were not identified or they were damaged in the mails. A few others arrived too late for our use. Nevertheless, we have tried to present as complete and accurate a story as possible.

This issue of THE JOURNAL considers, pictorially, education in the major segments of Pharmacy (see pages 601 to 607). Portrayed are typical facilities and students receiving instruction in the disciplines associated with *Industrial Pharmacy, Professional Practice,* and other major areas of modern *Pharmaceutical Education.* Pages 610 and 611 are devoted to photographs of the Faculty Advisers to the APhA Student Branches who are so important to the development of future leaders in our profession.

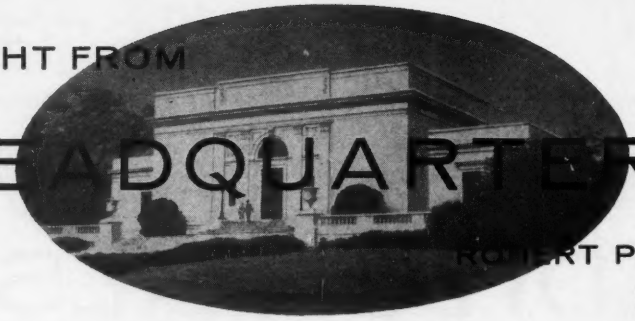
The feature articles appearing in this issue have been specially selected to provide a broad view of Pharmaceutical Education, both nationally and internationally. Dr. Donald C. Brodie discusses "Preprofessional Education in Pharmacy." Dr. Louis W. Busse presents his views on "Pharmacy Internship Training." Accomplishments in this country are given perspective when they are compared with "Pharmaceutical Education in Puerto Rico" by Dean Diaz as traced from 1527 to the present. Dr. Linwood F. Tice in "The Future of Pharmaceutical Education" makes several predictions concerning the direction we are about to travel.

Educators are charged with a very serious responsibility because the concepts they inculcate, the ideas they impress upon the minds being matured under their supervision, will largely determine what our profession will become in the future. Like putty in the hands of the sculptor, the undeveloped minds entrusted to the various Faculties are highly susceptible to every professorial word and deed. The effects of education on these minds can be dramatic, and the indelibly imprinted impressions received are frequently never erased during a lifetime. The Colleges hold our destiny in their hands.

Even beyond the borders of our own country, our Faculties can function. Through contact with foreign students, our principles of human dignity and freedom can be carried abroad. Through dedicated service in the field of health, as Dr. Howard A. Rusk points out in "Health for Peace," on pages 616 to 619, graduates of the Colleges can be a powerful force for international peace and can concurrently demonstrate the universal brotherhood of man.

Eric W. Martin

STRAIGHT FROM HEADQUARTERS



ROBERT P. FISCHELIS, SECRETARY

Dr. Dunning's Devotion to Education

On the occasion of the 80th anniversary of his birth (October 24), we have dedicated this number of THE JOURNAL—our Special Education Issue—to Dr. Henry Armit Brown Dunning of Baltimore, Maryland. A good look at our front cover reveals the portrait of a man of character and high achievement. Past President of the AMERICAN PHARMACEUTICAL ASSOCIATION and of the American Foundation for Pharmaceutical Education; Remington Medallist and recipient of many other high honors and awards, including honorary degrees from Johns Hopkins University, the University of Maryland and other colleges; honored also in numerous ways by his colleagues in the Maryland Pharmaceutical Association and by many other professional, religious and lay groups, we salute this outstanding pharmacist, philanthropist and humanitarian, especially as the founder of THIS JOURNAL.

Ever since he completed his undergraduate course in pharmacy, Dr. Dunning has been interested in pharmaceutical education. He began teaching at his alma mater shortly after he graduated and, in addition to continuing his own education through graduate studies and in the school of practical experience, he has helped to make it possible for innumerable capable young men and women to acquire both undergraduate and graduate education more readily.

It did not take him long to understand and appreciate to the fullest extent that education is a continuing process and that it is not necessarily something to be acquired entirely by formal means. Early in his career he recognized the importance of research and the development of the literature of science in general, and Pharmacy and Medicine in particular. Not only did he contribute personally to the literature of his profession, but in every way that he could, he has encouraged students and teachers of pharmacy, as well as practitioners, to contribute to pharmaceutical literature. As soon as he was able to make substantial financial contributions to the promotion of medical, pharmaceutical and general scientific literature, he did so through grants for specific studies and contributions to national and international publications devoted to the promotion of science and research..

It was in 1940 that he and the late Gustavus Pfeiffer made a contribution of $45,000, divided evenly between them, with which to launch the PRACTICAL PHARMACY EDITION of the *Journal of the American Pharmaceutical Association*.

Without tying any burdensome strings to their contribution, these co-founders of our JOURNAL made it possible to launch a medium for the dissemination of current information to the pharmacists of the United States, and Dr. Dunning has seen this medium grow and develop into one of our most valuable projects for continuing education of practitioners of pharmacy throughout the world.

While Dr. Dunning was a classroom teacher in his early days, his lasting contribution to pharmaceutical education, and to scientific education in general, consists of significant financial contributions and personal encouragement to research workers and teachers in educational institutions. A considerable portion of these contributions has been made through the American Foundation for Pharmaceutical Education but there have also been direct contributions to such institutions as Johns Hopkins University, the University of Maryland, Washington College at Chestertown, Maryland and to many foundations, institutes and special projects devised to add to the sum total of human knowledge regardless of its immediate practical application.

It is this broad interest in the advancement of knowledge through research and education that distinguishes Dr. Dunning's contributions to his profession and to the many other scientific and humanitarian agencies which he has patronized with careful discrimination.

Medical education and research have shared in his philanthropies as have also the institutions devoted to the healing of the sick while providing clinical experience and training for those who provide essential medical services.

At the age of 80, Dr. Dunning is in a position to look back on a lifetime of effort expended first in the compounding and dispensing of drugs according to the highest conception of the art of the apothecary, in a shop which always remained strictly a prescription pharmacy and which grew into a manufacturing laboratory devoted to the production of pharmaceutical specialties that have played a most important role in the prevention and treatment of disease.

Dr. Dunning's whole professional life has been distinguished by a zeal for genuine accomplishment in his chosen field of endeavor. The keen, incisive mind which has enabled him quickly to separate wheat from chaff in all of the fields of his special interest still functions with remarkable clarity when brought to bear upon the affairs of pharmacy and the AMERICAN PHARMACEUTICAL ASSOCIATION.

Getting down to the essentials and merging enthusiasm with the cautious development of facts, inspiring others with the will to do, and sticking at a purposeful project until it has been accomplished, are characteristics which distinguish this outstanding pharmacist. If ever there was a man in our midst with the head to conceive, the heart to endure and the hand to execute, it is H. A. B. Dunning.

Important Meeting of the House of Delegates

The interim meeting of the House of Delegates to be held at the Mayflower Hotel on Saturday and Sunday, November 9 and 10 will provide another splendid opportunity for intimate discussion of current problems facing American Pharmacy. So much has been going on in the field of medical care and public health, and so many new problems have arisen in connection with the professional aspects of distributing the services and products of the drug industry through the professional personnel constituting the practitioners of pharmacy, that a semi-annual review of factors influencing these services is not only advisable but necessary.

The possibility of an influenza epidemic, the precautions which must be taken to meet this possibility and thus avoid the serious complications which have been so disastrous in the past, and the necessary precautions which must be taken in the production and dispensing of new, powerful therapeutic agents call for much study, deliberation and action of the right kind.

Reports from government agencies and the committees of the ASSOCIATION dealing with developments in these various categories will be given and first-hand contact with them by so representative a body as our House of Delegates is essential for the future welfare of the profession of pharmacy.

The dates for the meeting of the House of Delegates have been so arranged as to enable members to combine their trip to Washington for this meeting with attendance at the Fourth Pan-American Congress of Pharmacy and Biochemistry scheduled for the week of November 3 at the Mayflower Hotel. This is the first time that a Pan-American Congress of Pharmacy has been held in the United States and the program of the Congress as well as the opportunity to meet our South American colleagues for the discussion of problems of mutual interest is well worthy of the consideration of our entire membership.

Members of the APhA who are not official delegates to the House of Delegates are of course welcome at all sessions of the House, although voting on policy matters is the exclusive prerogative of the official delegates.

National Pharmacy Week

Members of the ASSOCIATION who have participated actively in the observance of National Pharmacy Week in their respective localities are urged to send to the APhA Committee on Public Relations, 2215 Constitution Avenue, N.W., Washington 7, D. C., a full report of their personal or association activities for inclusion in the final report which will be published in THIS JOURNAL.

Those who have arranged for professional displays in their pharmacies, in public places or in the colleges of pharmacy are urged to send photographs to the proper judging committees as outlined in the directions which were mailed to every pharmacy in the United States and to all colleges, state and local pharmaceutical associations and national, state and local publications.

Preliminary reports reaching the Washington headquarters indicate that participation in National Pharmacy Week observance this year will be more complete than ever. Local as well as national television, radio and newspaper participation is better than ever and more pharmacists and pharmaceutical organizations than ever before have indicated enthusiastic interest in making use of this occasion to inform the public about the pharmacist's contribution to community health.

Charles W. Crawford

The death of former Food and Drug Commissioner Charles W. Crawford, in San Francisco on September 15 at the age of sixty-eight, calls to mind the devoted service which he gave to the passage of the present Federal Food, Drug and Cosmetic Act.

While Mr. Crawford undoubtedly served the government well in all of the capacities he occupied since entering the Civil Service in 1917, his major contribution was, without doubt, the intensive study and devotion he gave to the passage of the 1938 Food, Drug and Cosmetic Act.

Serving as a close associate of Commissioner Walter G. Campbell, he was assigned to the duty of literally living with the legislative proposals sponsored by the late Senator Copeland. Mr. Crawford was more familiar with the progress of this legislation through its various stages over the years during which it was under consideration than any other member of the Administration.

Although not a lawyer, he was a master of the detailed legal language in which the terms of this important Federal Act are couched. The Act in its final form bears many marks of his ability to draft statutes. Likewise, the regulations under the Act reflect his years of intimate experience with interpretations of legal language by the Courts.

There is very little in the way of possible loopholes in the Act that escaped his watchful eye and discerning mind. His power of concentration on the possible interpretations of the language of an Act was amazing. His ability to choose the proper terms with which to associate anticipated violations under the definitions for adulteration and misbranding have greatly facilitated judicial interpretation of the Act for the courts.

While there are, of course, many others who had much to do with the final text of the Act which was eventually passed, it fell to Mr. Crawford's lot to watch for possible destructive encroachments on language acceptable to the Administration, and his guardianship of the hard-won concessions to the protection of the public health was superb.

It took a crusading, self-sacrificing and intense devotion to the public interest to see this legislation through, and Mr. Crawford gave to that effort the devoted service which few others could match.

Pharmacy in the Americas may be better understood by reviewing

Pharmaceutical Education in PUERTO RICO, *1512-1957*

by Luis Torres Diaz*

For a better understanding of conditions governing the development of pharmaceutical education in Puerto Rico, perhaps it would be convenient for an outsider to know a few facts concerning the geographic and political conditions of the Island and, to some extent, the conditions prevailing in the practice of pharmacy and pharmaceutical education in the mother country at the time of the colonization of Puerto Rico by Spain.

Early History from 1493

Puerto Rico is the smallest of the Greater Antilles (West Indies) and the most easterly of all. It lies east of Hispaniola (Haiti and Dominican Republic), from which it is separated by La Mona passage, and west of the Virgin Islands. It is about 100 miles long and about 36 miles wide and nearly rectangular in shape with an area of about 3,600 square miles. It is bounded by the Atlantic Ocean on the north and east, the Caribbean Sea on the south and La Mona passage on the west. It has 2,264,000 inhabitants (approximately 660 inhabitants per square mile) and is considered the most densely populated country of America, the Bermudas excepted. It lies 1,600 miles south of New York.

Puerto Rico was discovered by Christopher Columbus in 1493 on his second voyage to the Indies. Don Juan Ponce de León, its first governor, established the first Spanish settlement at Caparra in 1508, almost one century before Jamestown, the first permanent American town, was settled. So the Island was settled by Europeans earlier than any other area now under the American flag.

It is a well known historical fact that Ponce de León, our first governor, discovered Florida.

In 1898, as a result of the Spanish American War and the Treaty of Paris, Puerto Rico became a possession of the United States. In May, 1917, the Puerto Ricans were made citizens of the United States; and on May 28, 1952, by an agreement between the United States Congress and the People of Puerto Rico, our Island was constituted as a Commonwealth (Estado Libre Asociado) with full self government on local matters and, therefore, with the right to elect its own governor and legislative bodies. San Juan is the Capital of the Island with a population of 358,000 inhabitants.

Pharmacy in 1512 Under Spanish Rule

By the time that mention is first made of a pharmacist in the history of Puerto Rico (1512), the profession in Spain was ruled by the "Colegios de Boticarios" (Colleges of Apothecaries) in some regions and by the "Tribunal del Protomedicato" (The Protomedicat Tribunal) in others. This Tribunal was the source of many of the laws governing pharmacy, dictated by the Spanish rulers of the time. These specific laws regulating the practice of pharmacy were extended unaltered to all the Spanish colonies in America, including Puerto Rico. As early as 1535, Don Carlos, the Spanish Emperor and the Governing Empress enacted a law providing that "those who are forbidden by the laws and pragmatics of the reigns of Castille to be physicians, surgeons and apothecaries are under the same prohibition in the Indies and that nobody shall receive the title of doctor, master, or bachelor without being examined and graduated by an approved university," and that "he who transgresses shall incur the penalties established, which the Royal justices shall execute, ordering that the titles be exhibited so that truth may be made clear." Likewise, in 1579, King Philip II of Spain enacted a law providing that "the King's physicians shall not extend licences in the Indies to any physician, surgeon, apothecary, barber, algebraist, nor to the rest that practice the medical and surgical professions, if they do not appear personally before them in order to be examined and are found able and capable to practice."

The Spanish Crown early provided for the teaching of medicine, surgery, and pharmacy in the principal universities established in its domains of the New World. In Puerto Rico, although the profession of pharmacy was early regulated, there was no formal teaching of pharmacy in the Island until 1820. Before this date the profession was in the hands of pharmacists coming from Spain where there were already established creditable schools of pharmacy. A few came from France and still others were graduates from the University of Havana. The young Puerto Ricans who wanted to become full-fledged pharmacists had to go to Spain, Cuba, or France for their education, and it is understood that there were only a few who had the means to do it. People who had served an apprenticeship with a pharmacist were, after several years, permitted to open shops in the smaller towns of the Island for dispensing of "simples," but they were not permitted to compound, except in very urgent cases under immediate supervision of the prescribing physician. Under very special circumstances persons who had a knowledge of Latin grammar, botany, and chemistry and who could prove that they had practiced in an accredited pharmacy under the supervision of a pharmacist might apply to the Governor of the Island for an examination which, if the Governor so decided, was given to them by two reputable pharmacists that the Governor might choose, and if the aspirants passed the examination

* Presented to the Section on Historical Pharmacy of the APhA and the American Institute of the History of Pharmacy at the New York Convention, May 1, 1957.

LUIS TORRES DIAZ, Dean, College of Pharmacy, University of Puerto Rico, obtained his Ph.C., B.S., and M.A. degrees at the same school and took graduate courses in pharmacy at the University of Michigan and in chemistry at Columbia University. He is chairman of the Puerto Rico Auxiliary Commission for the Revision of the U.S.P., is a charter member of the International Academy of the History of Pharmacy, a member of the Rio de Janeiro Academy of Pharmacy, and honorary member of the Instituto Brasileiro da Historia da Medicina. He is founder and president of the Puerto Rico Foundation for Pharmaceutical Education.

they were allowed to practice the profession until they could afford to go to Havana to ratify their titles at the Protomedicat of that city.

Formal Courses in 1820

In 1820, the Municipal Council of San Juan, the capital of the Island, resolved to establish chairs of medicine, surgery, and pharmacy at the "Hospital de la Concepción" in San Juan, which chairs were put under the direction of Dr. José Espaillat, the physician and surgeon in charge of the Hospital.

In 1838, the Superior Board of Pharmacy of the Spanish Realm appointed Don Urbano Blázquez de Pardo as a subdelegate of the Board on the Island. He examined several candidates and gave them provisional certificates for the practice of pharmacy, which were later made valid by the Royal Subdelegation of Pharmacy of the Island of Puerto Rico. These candidates could obtain their preparation in botany, chemistry, and pharmacy either under the direction of the pharmacist who supervised their practice or from any other person who was known to be proficient in these subjects. Obviously some of the aspirants attended the lectures offered at the Hospital de la Concepción under the direction of Dr. Espaillat and also the lectures offered by Father Rufo Manuel Fernández. Father Rufo Manuel Fernández was a Galician priest who came to Puerto Rico in 1832. He was a professor of chemistry and physics at the University of Galicia, Spain, and in 1834, aided by the "Sociedad Económica de Amigos del País" (Economic Society of Friends of the Country) he established a course in physics and chemistry and the first chemical laboratory in the Island. This laboratory was transferred in 1844 to the Concilliary Seminar. Father Rufo stimulated many young Puerto Ricans to further their preparation in Spain. He obtained scholarships from the government to send the most promising young men to continue their studies in the mother country. Among the persons he sent, two went with the object of studying pharmacy. Unfortunately, both of them died in Spain before finishing their careers.

Local Regulation Since 1842

Due to a state of "confusion and disorder" prevailing in pharmaceutical practice in the Island, Governor Miguel López de Baños in 1839 wrote an official statement to the Superior Board of Pharmacy in Spain suggesting the convenience of establishing a Royal Subdelegation of Pharmacy in Puerto Rico. In the same year, by a royal order, the Royal Subdelegation of Pharmacy was provisionally established in the city of San Juan. The rules and regulations by which the Subdelegation should abide were submitted to Her Magesty for approval and amendment on August 8, 1839, and the Subdelegation was definitely established in 1842.

College of Pharmacy, University of Puerto Rico

According to the bylaws of the Royal Subdelegation of Pharmacy, the course of studies in pharmacy would consist of four years of practice at any one of the pharmacies of the Island under an authorized pharmacist, and during this time the neophytes would study the sciences auxiliary to pharmacy. They would study elements of natural history during the first year, chemistry during the second, all the drugs or medicinal substances used in pharmacy during the third, and experimental pharmacy or the preparation of all kinds of medicines during the fourth year.

At the end of each year the student had to take an examination given by the Subdelegation on the course he had finished and was given a certificate after passing.

At the time of reporting to take the examinations, the applicants had to present certificates of the persons with whom they made their studies. Such a person could be, for the courses of natural history and chemistry, anybody who, in the concept of the Subdelegation, was considered able to teach these subjects; but for the courses of materia pharmacéutica and practical pharmacy he should be specifically an authorized pharmacist. This was to be considered a provisional arrangement until the corresponding chairs on these subjects were definitely established by the Subdelegation. Dr. Agustín Stahl, the great Puerto Rican naturalist, anthropologist and physician, after whom our Pharmacy Building is named, held the chair of botany for a time.

On completion of all the studies the candidate had to take two examinations. One was theoretical and of at least one and one-half hours' duration; the other was practical and of the same length of time. The practical examination consisted of making two pharmaceutical preparations before a member of the Subdelegation and, besides, of pharmaceutical practice during a whole day at a pharmacy, and his work was watched by, and had to satisfy, the pharmacist in charge of the pharmacy. He had, furthermore, to answer questions that the members of the Subdelegation saw fit to ask him on the two preparations made by him.

Having met these requirements, the candidate received the title of Licentiate in Pharmacy (Licenciado en Farmacia) issued by the Royal Subdelegation, giving him the right to practice pharmacy in Puerto Rico.

If a graduate wanted to have his right to practice pharmacy extended to the entire Spanish Domain, the title had to be issued by the Direction of Studies of the Realm, and the Subdelegation had to send to the Direction of Studies the name, place of birth, age, and personal characteristics of the applicant and number of pharmaceutical preparations made by him.

Almost all of the pharmaceutical practitioners on the Island from the establishment of the Royal Subdelegation of Pharmacy until the military occupation of the Island by the United States on July 25, 1898, i.e. for more than 50 years, were graduates of the Subdelegation. It is estimated that over 300 Puerto Ricans received their titles from this educational institution.

Code of Ethics of 1846

Don Fermín Sánchez Toscano, chairman of the Spanish Superior Board of Health, on July 17, 1846, established a number of rules to be observed by the physicians, surgeons, and pharmacists throughout the Spanish Kingdom and therefore in Puerto Rico. These rules might be considered a code of deontology for the health professions since they clearly specify the duties of the practitioners in each field. They have many things in common with our modern codes of ethics.

Occupation by the U. S.

After the occupation of the Island by the United States, Major General Brooke, American Military Governor of the Island, on December 1, 1898 ordered the abolishment of the Royal Subdelegation of Pharmacy of Puerto Rico and transferred its functions to the "Instituto Civil de Segunda Enseñanza," an educational institution already established in the Island which conferred degrees. The "Instituto" would be in charge of the subjects and examinations corresponding to the degree of Licentiate in Pharmacy until the University of Puerto Rico was established. General Brooke's order also provided that the examination and title fees would be the same as the Royal Subdelegation of Pharmacy charged; that the Bachelor's degree as well as the Licentiate in Pharmacy degree could be obtained by free studies, provided it was proved by annual certificates that the aspirant had completed three years of practice at a good pharmacy. The archives or files of the Subdelegation were transferred to the Institute as provided by General Brooke's order.

At the same time, a Superior Board of Health was created by the American government which would issue licences for the practice of pharmacy on the presentation of the titles issued by the Institute or by accredited schools of pharmacy in the United States. The Board could also examine candidates for the practice of pharmacy. Besides the requirements mentioned above, the candidate should possess an average school education—English or Spanish—which he should be able to demonstrate if required to do so. He should take an examination before an examining committee of the Superior Board of Health in general chemistry, toxicology, materia medica, principles and practice of pharmacy, and elements of botany and physics.

Brigadier General Davis, of the American military headquarters at San Juan, issued an order on November 27, 1899 in which it was provided that applicants who possessed diplomas from accredited Colleges of Medicine or Surgery or Schools of Pharmacy, and who had obtained licences from the Board of some state to practice their profession, could be issued licenses without examination, after they had paid $25, if the Superior Board of Health so decided.

First Pharmacy Bill of 1906

The first bill concerning pharmacy was passed by a Puerto Rican legislature in 1906. It retained the basic requirements established by the American military government, and although formal academic study was not required the examinations were designed to assure an adequate level of knowledge for pharmaceutical practice. The examination plan was as follows:

First year: general inorganic chemistry, natural history (botany, zoology and mineralogy), and inorganic qualitative analytical chemistry.

Second year: inorganic quantitative analytical chemistry, theoretical pharmacy, pharmacology and therapeutics, and materia medica.

Third year: organic chemistry, practical pharmacy (including a study of the *United States Pharmacopoeia*), toxicology, and incompatibilities. All the examinations were in writing, and the passing grade was 75%. Besides, the candidate had to pass a practical examination at a drug store in San Juan under the supervision of the examiners. After all the examinations were duly approved, the Board would issue to the candidate the degree of "Licentiate in Pharmacy" which entitled him to practice pharmacy in Puerto Rico.

The Board had the duty of preparing, giving, and correcting the examinations for the practice of pharmacy every year.

It may be said that during the period of time between the American occupation of the Island and the establishment of the College of Pharmacy of the University of Puerto Rico, pharmaceutical education in the Island suffered a temporary drawback. This is to be expected whenever a change of sovereignty takes place in a country. All things seem to be upset at first, but in our case, things rapidly came back to normal. The University of Puerto Rico was created in 1903 by a bill passed by the Puerto Rican Legislature on March 12 of that year.

College of Pharmacy Established

On September 22, 1913, a Department of Pharmacy was opened as a part of the University of Río Piedras, where a Department of Liberal Arts and a Normal School had already been established.

At the beginning, the curriculum of the Department of Pharmacy consisted of two years leading to the degree of Pharmaceutical Chemist. A four-year curriculum leading to the degree of B.S. in Pharmacy was also announced, but nobody registered in this course. On June 3, 1916, the two-year course was increased to three-years and the same degree, Pharmaceutical Chemist, was to be granted on its completion. In September 1919, a two-year course for the degree of Graduate Pharmacist was established and the three-year course leading to the degree of Pharmaceutical Chemist was also continued. In 1925, the University of Puerto Rico underwent a general reform and the Department of Pharmacy, which had been organized by Doctor Luis A. Salivia, its first Director, was then organized as a College of the University, and Don Lucas Luis Vélez was appointed Dean. Don J Federico Legrand was the first Professor of Pharmacy at the College. In November 1928, the four-year pharmacy course was adopted, leading to the degree of Bachelor of Science in Pharmacy. In 1949 the College increased its course to five years.

The College of Pharmacy of the University of Puerto Rico was recognized by the American Association of Colleges of Pharmacy in 1932 and by the Department of Education of the State of New York in April, 1950. In 1951 it was graded an "A" College by the American Council on Pharmaceutical Education. Its curriculum conforms to the requirements of the accredited colleges of pharmacy of the United States with the necessary adaptations to the Puerto Rican needs. It is revised almost every year to include the most up-to-date trends in the field of pharmaceutical education.

The College of Pharmacy of the University of Puerto Rico has a total enrollment of 185 students of whom about 50% are girls. It is located in a building of its own on the Río Piedras campus. Río Piedras is an urban area, now a part of San Juan, capital of the Island.

Besides the ordinary facilities found in most of the accredited colleges of pharmacy, the College of Pharmacy of the University of Puerto Rico has a College Library and a Pharmacy Museum, which, in addition to many other objects of historic interest, contains the collection of old apothecary jars used in the pharmacy of the first professor of Pharmacy of the College, Don J. Federico Legrand. It contains also the present Dean's collection of old apothecary jars. The College has a Model Pharmacy and a modern Pharmaceutical Research Laboratory, a Manufacturing Pharmacy Laboratory, and an Experimental Medicinal Plant Garden. ■

BIBLIOGRAPHY

Torres Diaz, Luis, *A Concise History of Pharmacy in Puerto Rico.*

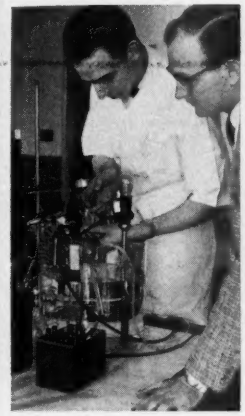
Diccionario Enciclopédico Uteha, Tomo VIII.

Folch Jou, G., *Historia de la Farmacia.*

Historic Archives, College of Pharmacy of the University of Puerto Rico.

Rotkin and Richardson, *Puerto Rico, Caribbean Crossroads.*

DISCIPLINES
Medical Technology
Idaho State College



Pharmaceutical Education

Education of the "whole" pharmacist in our Colleges of Pharmacy demands that attention be given to his physical, spiritual, and mental fitness. It is recognized that basic grounding should be given not only in the physical and biological sciences and arts of Pharmacy but also in the social sciences and the humanities. No man, it seems, can be deeply and serenely happy and no man can make his finest contributions in his profession without at least a general background in the seven liberal arts: grammar, rhetoric, logic, arithmetic, geometry, music, and astronomy.

Physical fitness is achieved in most Colleges through extracurricular and intercollegiate sports. Students of most Colleges have access to gymnasiums and in a number of the Colleges the part of the ROTC program devoted to drill is helpful.

Spiritual fitness is achieved in the Colleges through inspirational assemblies, religious activities associated with the Colleges, and the rituals of certain fraternities and sororities. In every institution which has made real progress through the years there are always to be found members of the faculty with deep spiritual insight capable of highly inspirational leadership.

Mental fitness of the pharmacist is undoubtedly considered to be the major goal of the Colleges of Pharmacy. Training in this area has evolved into a comprehensive group of disciplines which may be categorized as sciences, arts, and humanities.

INDUSTRY
Manufacturing at
U. of Illinois
College of Pharmacy

PRACTICE
Retail Pharmacy
U. of Minnesota
College of Pharmacy

Sciences

The sciences of Pharmacy may be grouped into physical, biological, and social categories.

Physical sciences studied in the Colleges include physics and chemistry. The latter is usually subdivided into general, inorganic, organic, analytical (qualitative, quantitative, and drug assay), physical (physical pharmacy), and medicinal chemistry.

Biological sciences presented in the Colleges include anatomy, biochemistry, biology, first aid, histology, microbiology, pharmacognosy, pharmacology, physiology, public health, toxicology, and zoology. Biological assay, so important in drug standardization, is sometimes considered to be a branch of pharmacology.

Social sciences include accounting, advertising, business administration, communication (both the written and the spoken word), drug marketing (including detailing), economics, ethics, history of Pharmacy, law (pharmaceutical and business), logic, management, mathematics (pharmaceutical arithmetic, calculus, and statistics), orientation in the profession, and philosophy.

Arts

The arts of Pharmacy comprise the manual techniques. This aspect of Pharmacy, once its major forte, is rapidly dwindling as Pharmacy completes its passage from the status of being at times almost a trade to the stage of being a highly respected scientific profession. Techniques still studied for their value in developing familiarity with the physical characteristics of drugs of all types include compounding, small scale manufacturing, dispensing, and the making of pharmaceutical preparations. The handling of sick room supplies, surgical supplies, and various human and veterinary medicinal products is also taught.

Humanities

Polished human beings who respect the sensibilities of others have acquired richness of personality through study of ancient classics, grammar, rhetoric, poetry, linguistics, and other disciplines which facilitate not only the more delicate shades of intercourse between men, but also human relations in general.

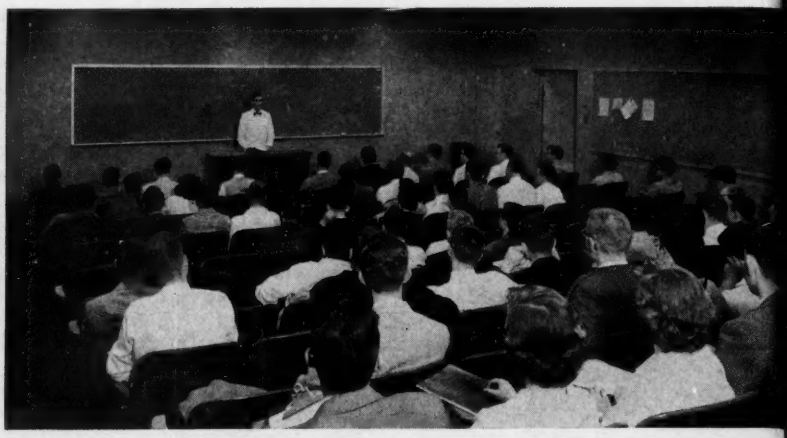
Major Segments of Pharmacy

The large areas of Pharmacy which are provided with trained personnel by our modern pharmaceutical educational system are *Professional Practice* in Retail and Hospital Pharmacies (page 606 and 607, and in the April Issue pages 213 to 234); *Industrial Pharmacy*, embracing research, development, production, and sales (pages 604 and 605); and *Pharmaceutical Education* itself which is currently producing some 4,000 graduates from 76 accredited Colleges of Pharmacy under the guidance of nearly 1,000 educators and assistants (pages 602 and 603).

Other areas utilizing fewer pharmacists but which are nevertheless highly important to the profession as a whole include: (1) certain Governmental activities at the Federal, State, and local levels, including drug law enforcement, as well as administrative and technical activities in the Veterans Administration, Food and Drug Administration, Public Health Service, Armed Services, and other agencies; (2) associations at the national, State, and local levels; (3) wholesaling; and (4) numerous specialized areas such as editorial work and writing, pharmaceutical administration, detailing, and library research.

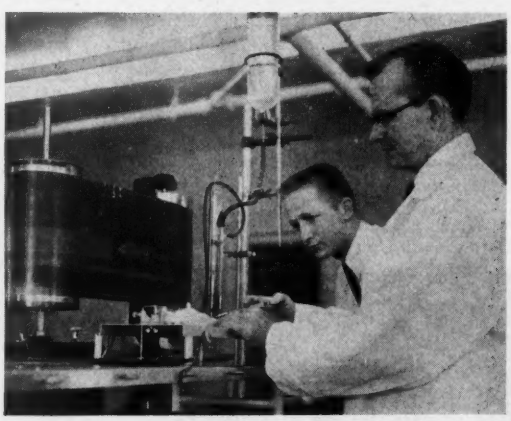
EDUCATION FOR Pharmaceutical Disciplines

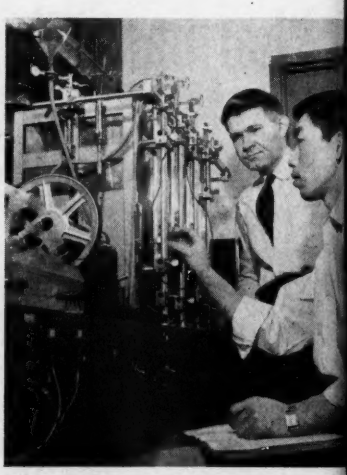
MICROBIOLOGY courses, shown here at St. John's U. Coll. of Pharmacy, prepare for careers in the manufacture of biologicals



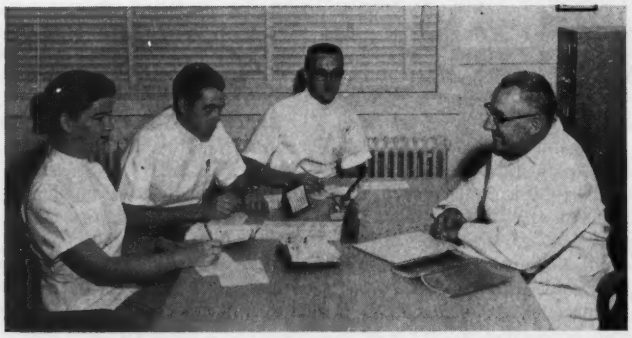
LECTURES, such as that shown here in the Health Professions Bldg. at the University of Pittsburgh, impart to the students in a logical and stimulating manner basic background needed for a successful career

PHARMACOLOGY has become one of the major subjects taught in the modern pharmaceutical curricula of Pharmacy Colleges





BIOCHEMISTRY is recognized as the init ing discipline of the biological sciences. S here are researchers at Drake U. College of Phar



Counseling sessions with the Dean in an informal manner, as at College of the Pacific School of Pharmacy, prevent misunderstandings, enrich the program and permit close personal contact for better guidance of the student

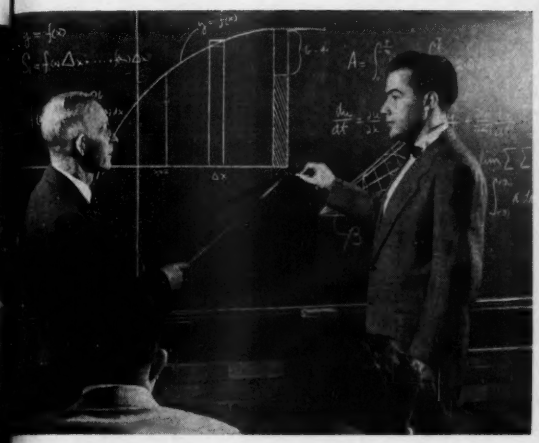
TECHNIQUES of Pharmacy are taught in the elementary pharmacy courses to provide students with basic physical information about drug products and compounding at College of Pharmacy, Idaho State College

es

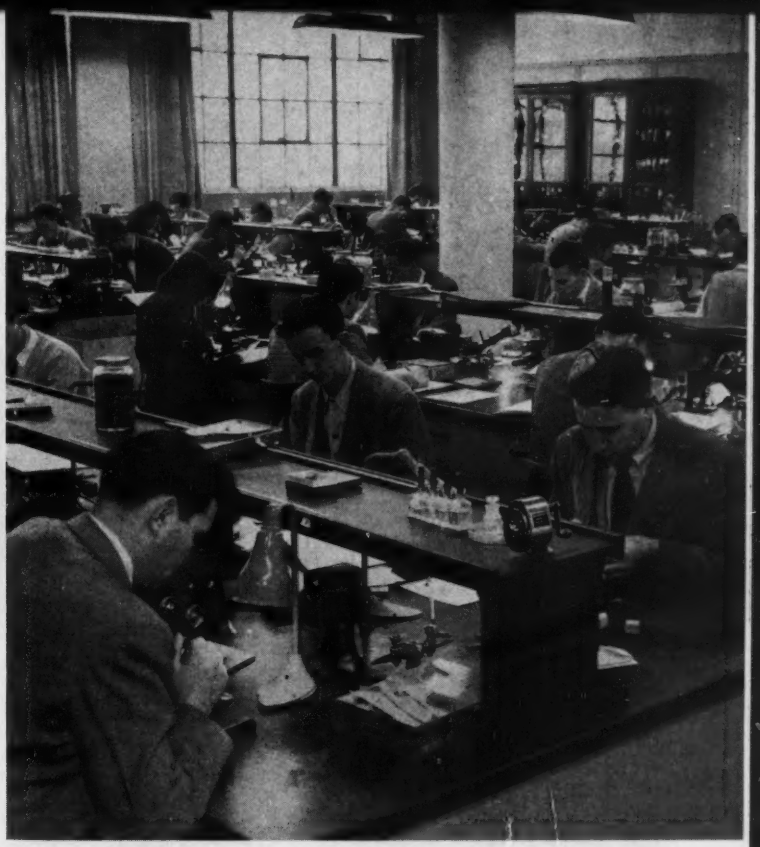
ittsburgh,
sful career

d as the int
sciences. S
llege of Phar

e ele-
basic
com-
ollege



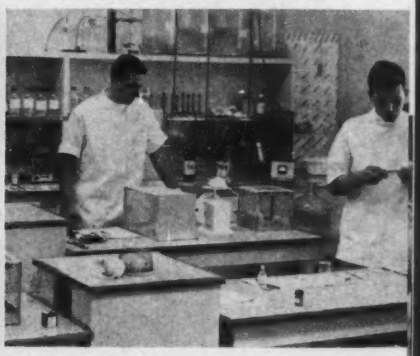
MATHEMATICS presented in our Colleges includes courses in statistics for biometricians and a course in integral calculus as shown at University of Maryland School of Pharmacy



PHARMACOGNOSY is being given less emphasis as the use of crude drugs has declined but it is still considered to be a useful discipline for initiating the student into the fields of both microscopy and phytochemistry at the Temple University College of Pharmacy

LIBRARY research is an essential step in broadening students for careers in research at Rutgers University College of Pharmacy

DEAN'S OFFICE is the nucleus where administrative threads are brought together and whence policy emanates at U. of Wyoming College of Pharm.



PHYSIOLOGY instruction demands adequate facilities for experimentation with animals, as well as equipment for dissection, and also histological studies

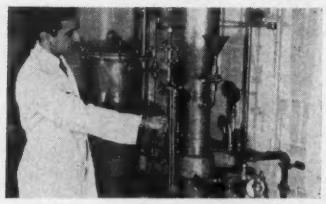
MEDICAL TECHNOLOGY, a course designed to enable students to operate a clinical laboratory, shown at U. of Minn. College of Pharmacy

RADIOISOTOPE techniques, a new field for hospital and other professional pharmacists, shown being taught at Philadelphia College of Pharmacy and Science to a group of hospital pharmacists

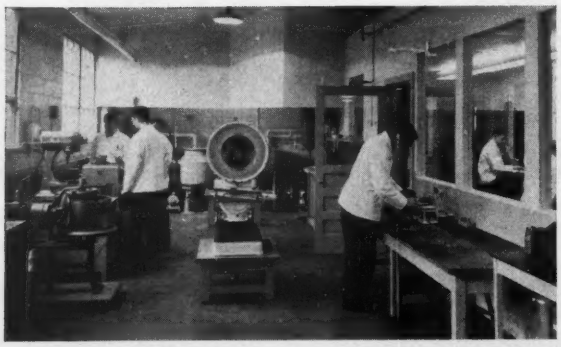
EDUCATION FOR

Industrial Pharmacy

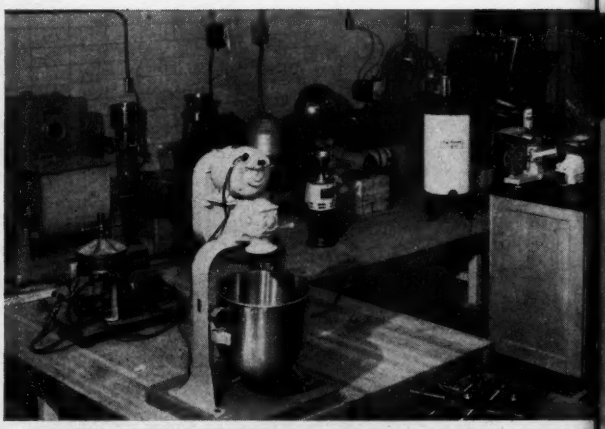
NATURAL PRODUCTS is a field of research entailing use of selective solvents and recovery. Shown at Ohio State University College of Pharmacy



SOLVENT RECOVERY, photographed at University of Conn. College of Pharmacy, is achieved with a Lloyd Extractor



WEIGHING on various types of balances is an essential manufacturing operation which is being carried out in the State University of Iowa College of Pharmacy manufacturing laboratory

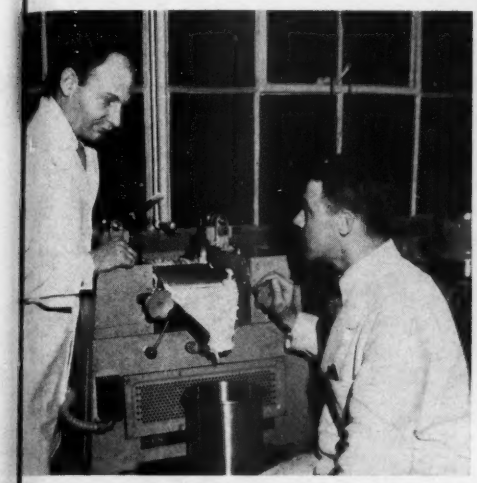


SMALL SCALE operations simulating those carried out in large industrial pharmaceutical plants are used in the instruction of basic manufacturing processes at Howard University College of Pharmacy

ORGANIC SYNTHESIS, shown at Montana State University College of Pharmacy, is responsible for most of Pharmacy's wonder drugs and is an exciting occupation yielding psychic and financial rewards

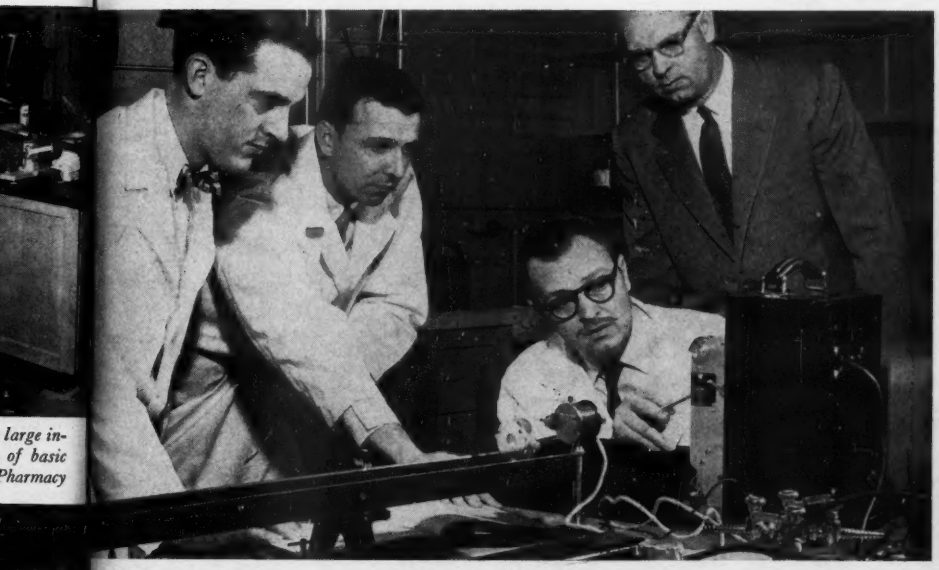
MIXING of pharmaceutical products in copper kettles, some of which are jacketed for regulating the temperature, are used in the preparation of solutions at Columbia University College of Pharmacy

OINTMENTS are processed in special mills to make them both homogeneous and absolutely smooth at Temple University College of Pharmacy manufacturing laboratory

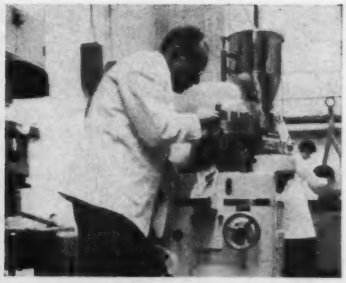


CRUDE DRUGS, now seldom used as such, provide a rich source of ideas for new drug products. Students learn to identify them microscopically in the U. of Minn. pharmacognosy laboratory

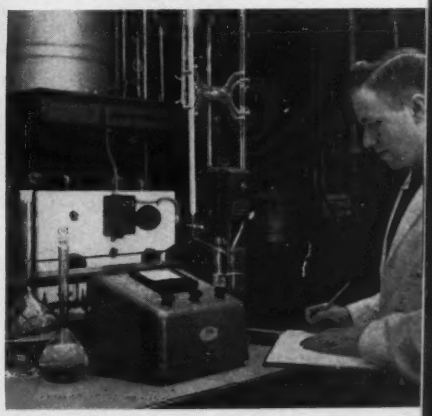
DEVELOPMENT of modern pharmaceutical products requires prolonged stability and potency studies utilizing equipment such as the constant temperature bath shown at Columbia U.



RESEARCH of a fundamental nature is essential for the continued and long-range development of the wonder drugs for which our country has become famous, especially during the last 25 years. Vision, being developed in research laboratories like that shown above at Rutgers, is largely responsible

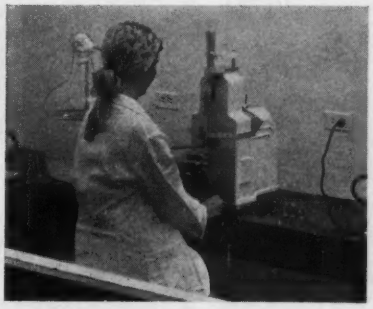


TABLET production requires previous instruction in formulation and adjustment of high speed equipment as shown at U. of Mich. College of Pharmacy



CONTROL of pharmaceuticals, one of the most important activities in industrial pharmacy, is dependent on physical, chemical, and biological procedures as shown at University of Minnesota

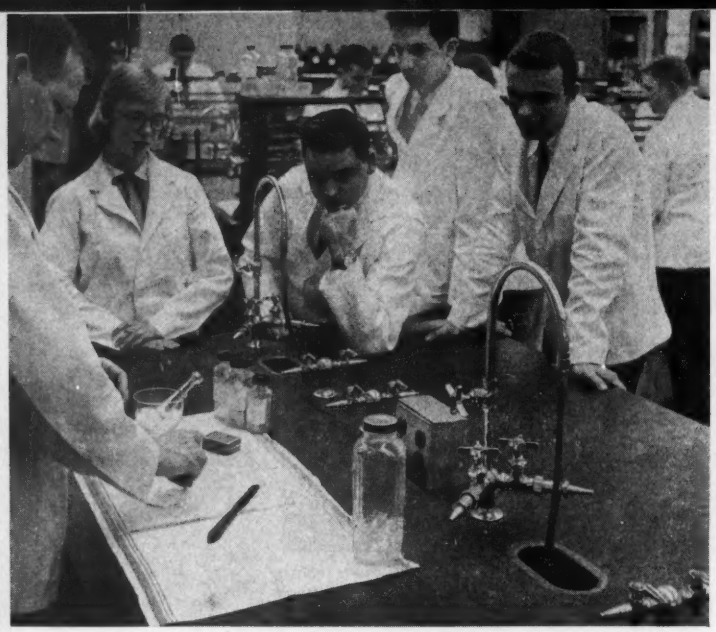
LYOPHILIZATION research is being conducted above in pharmaceutical research laboratories of the College of Pharmacy at the University of Florida



AMPUL FILLING in sterile section of the manufacturing laboratory of the College of Pharmacy, University of Puerto Rico, using semi-automatic metering device

Compounding

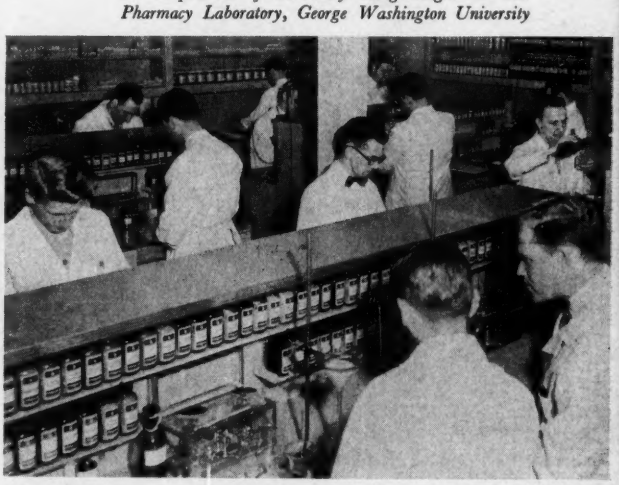
EDUCATION FOR Professional Practice



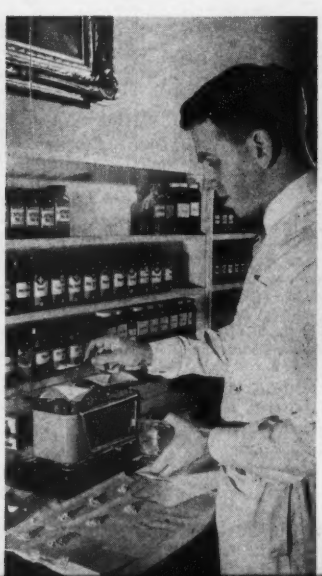
CAPSULES being dispensed by an instructor in the pharmaceutical technology laboratory of the University of Michigan College of Pharmacy, as students observe

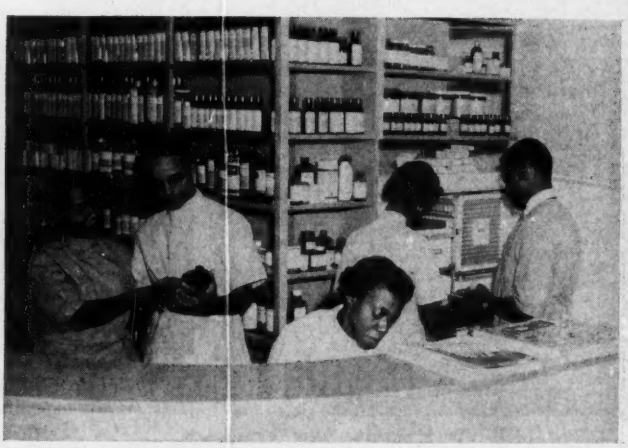
FILTRATION techniques which are essential to the practice of Pharmacy being taught at new Pharmacy Laboratory, George Washington University

SOLUTIONS are dispensed by senior students in the Model Pharmacy, Purdue University School of Pharmacy for the Health Center physicians



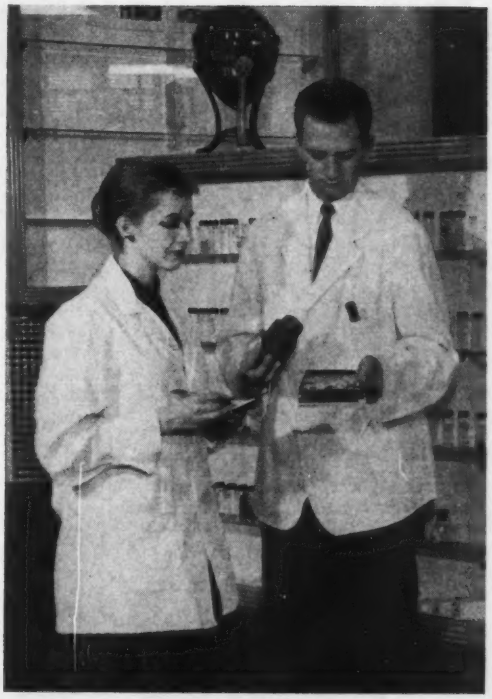
POWDERS are carefully weighed by a student of Pharmacy in the dispensing laboratories, part of Ohio State University College of Pharmacy at Columbus, O.





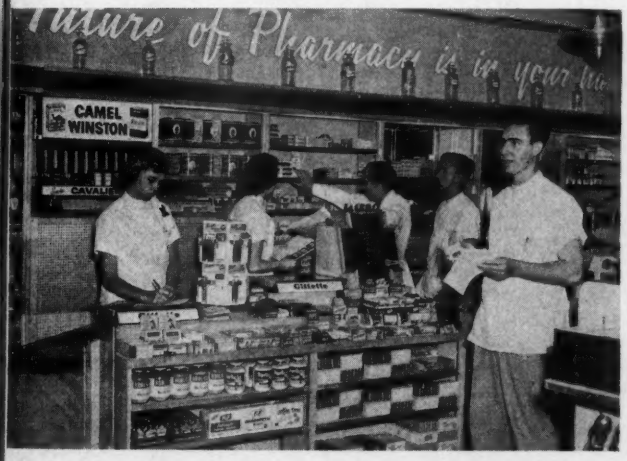
INVENTORY of drugs and biologicals being checked by a group of students in Model Pharmacy of Texas Southern University College of Pharmacy as one student records items

TELEPHONED PRESCRIPTION being received by student at her dispensing counter in the prescription practice laboratories of the State College of Washington College of Pharmacy as a practical exercise

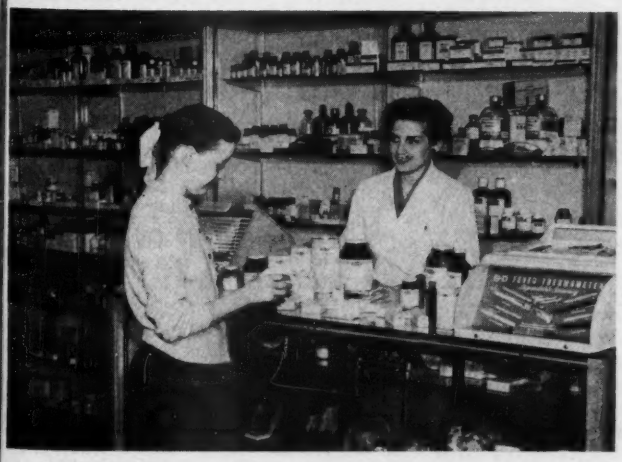


NEW PRESCRIPTION PRODUCTS are thoroughly studied in preparation for professional consultation with physicians in the Brooklyn College of Pharmacy of the Long Island University, N.Y.

ORDER for the wholesaler is being prepared as student pharmacists, future retail pharmacists, check the drugs and sundries in the Model Pharmacy of the University of Georgia College of Pharmacy



CONSULTATION with a Health Service physician and head nurse to check the day's assignment for students who work in the Health Service Dispensary, operated by University of Utah College of Pharmacy



SELECTION of over-the-counter drugs is made under immediate supervision of a "registered pharmacist" in the Model Pharmacy, Montana State University, Missoula, Montana

Strong arguments are presented for 3 years of professional study following 2 years of

Pre-professional *Education in Pharmacy*

by Donald C. Brodie*

SINCE 1932 educational preparation for the profession of pharmacy in the United States has consisted of four years of professional study. The curriculum has included, in addition to strictly professional courses, those basic science courses which today are usually classified as pre-professional. The educational inadequacies of the program, particularly in the lack of general education courses, was emphasized in the findings of the Pharmaceutical Survey (1946–49) which recommended the establishment of a two-year pre-professional curriculum preliminary to the four years of professional study. Such a program places pharmaceutical education in accord with the educational programs of the other health science professions, the general pattern of professional education in the United States being a pre-professional program followed by a professional curriculum.[1] Although the specific requirements understandably vary from one professional field to another, the philosophy underlying pre-professional education remains essentially the same.

* The author wishes to acknowledge the suggestions of Dean T. C. Daniels, School of Pharmacy, University of California, and the editorial assistance of Dr. Ruth B. McVaugh, Department of Physiology, University of Michigan.

[1] Blauch, L. E., and Webster, G. L., *The Pharmaceutical Curriculum*, The American Council on Education, Washington, D. C. (1952).

DR. DONALD C. BRODIE, Professor of Pharmacy and Lecturer in Pharmacology at the University of California Medical Center, San Francisco, received his B.S. in Pharmacy and his M.S. degree from the University of Southern California and his Ph.D. from Purdue University. He was Assistant in Pharmacology at the University of Rochester School of Medicine (Manhattan Project 1944–45) and Associate Professor of Pharmaceutical Chemistry at the University of Kansas 1945–47. Since then he has been a member of the staff of the School of Pharmacy, University of California. Dr. Brodie is currently on sabbatical leave and is spending a year in the Department of Physiology at the University of Michigan.

Justification for Pre-professional Education

In general, the justification for pre-professional education rests on three educational factors.

The first factor recognizes that a professional person who is trained only in his own field, no matter how proficient he may be in its skills and techniques, is in a very real sense uneducated. He is not equipped with a broad educational experience in the culture and heritage of his civilization; he is ill-prepared to accept the responsibilities of community leadership; he lacks understanding of the behavioral patterns of his fellowmen, those whom he would serve in a professional way. Hence, pre-professional education has as a major objective education "of the whole man." It is designed to establish a broad general education, one which will serve not only future professional needs, but one that will also contribute to his usefulness as a member of society.

The second factor stems from the necessity for mastery, by the professional student, of the fundamental sciences upon which the knowledge and skills of his profession are based. For example, law and theology draw heavily on the fundamentals of social studies, the humanities and philosophy; engineering requires a solid foundation in mathematics and physical sciences; and the health sciences require a strong background in the biological and physical sciences.

The third factor arises from the first two; general education and fundamental science courses are necessary, yet they cannot be incorporated into professional curricula because the latter are already overcrowded. This is a dilemma of contemporary professional education. It has been created by our expanding scientific accomplishments, our development of skills, proficiency, and specialization, all of which contribute to the vast stores of knowledge that now constitute the educational resources of the professions. Hence, pre-professional education was born of educational necessity.

Pre-professional training actually has its inception in the secondary school where basic courses, at an appropriate level, are developed in social studies, humanities, mathematics, and science. In the thirteenth and fourteenth years of the American educational system, expansion and extension within the above areas take place in the community college or in the lower division of the University or the four-year college. Admission to some professional curricula is based on completion of two collegiate years of study; others require three or four years. In case of the latter, an applicant for professional school may be required to present a baccalaureate degree as a qualification for admission.

Objectives of the Program

The objectives of any pre-professional program must be designed to fulfill specific educational needs in the professional course of study; they must be broad in scope to permit students the opportunity for maximal educational growth consistent with their individual interests and talents. In keeping with what practitioners and educators, in general, agree are reasonable objectives for pharmacy education, objectives for the pre-pharmacy program may be proposed:

I. To provide students with an understanding of the principles of the following disciplines:
   a. Zoology and botany, thereby providing the basis for the development of a sound sequence of courses in the biological sciences at the professional level.
   b. General chemistry, physics and mathematics, providing the basis for a sequence of courses in the physical sciences.
   c. Economics (time permitting), establishing the fundamentals upon which the area of pharmacy administration is built.

II. To improve communication skills and develop in students appreciation and understanding of their civilization; to provide them with the maximal opportunity as time will permit for study of the arts, humanities, social studies, philosophy, etc., thereby providing a broad educational background for professional service and daily living.

Objective I is essential since it lays the ground work for the three main components of the professional curriculum upon which pharmacy practice rests. Again it should be emphasized that since the professional curriculum does not provide time for the development of these fundamental areas, a student must be so equipped in advance of admission to the professional school. Objective II is broad in its implication; it is the general education objective. A desirable corollary accomplishment of these objectives is that students applying for admission to the professional schools will be more mature and experienced than those of former years.

Sample Pre-pharmacy Curriculum

The following is a sample pre-pharmacy curriculum. It carries 60 semester units of lower division credit and requires two academic years, or the equivalent, for completion.

General Chemistry, including qualitative analysis	8–10
First-year Zoology, with laboratory	8
General Botany, with laboratory	4–5
Physics, with laboratory (heat, light, sound, electricity)	8
First-year Calculus	6
First-year English or Speech	6
Economics	3–6
General Education Electives	11–17
Semester units	60

Approximately one-third of the above program is devoted to English and general education courses. (Objective II.) At first glance, this may appear adequate, but there are factors that tend to complicate this picture and diminish its flexibility. For example, at institutions where military science is required for male students during the first two years of residence, 8 units will be devoted to this requirement.

The State of California imposes on all who receive the baccalaureate degree a requirement in American History and American Institutions. If a student elects to fulfill the requirement through formal courses, this amounts to 6 semester units. Some institutions have specific requirements of all students in such areas as Western Civilization, Religion, etc. Thus, it becomes obvious that it may be extremely difficult to maintain the desired degree of flexibility in the elective program.

A question that often arises in considering the General Education Electives is the desirability of making certain courses required. For example, should all students complete one year of psychology, foreign language, ethics, etc.? Strong cases can be presented in support of some of these suggestions: for example, at the recent Teachers' Seminar on Pharmacology held in Seattle, a rather convincing plea[2] was made for a requirement of one year of psychology (General and Abnormal, 6 units) for pharmacy students, justification being the current importance of psychopharmacological agents. Equally convincing is the argument supporting formal instruction in ethics (Philosophy, Ethics, 6 units).

One factor that should weigh heavily in making the decision as to the number of required courses is the degree of flexibility that exists in the curriculum. The student should have as much latitude as is possible in the selection of his elective program. In general, the greater the opportunity for individual selection by the student, the greater the educational benefit.

One place in the above curriculum that may offer an opportunity to improve the elective program resides in the zoology-botany requirement. Considering that about 20% of the total pre-professional program is devoted to the development of a background in the biological sciences, one might seek ways of reducing the time.

In some institutions courses in General Biology have been designed for non-biology majors, in which zoology and botany are brought together within a common framework. General Biology is mentioned from time to time in the educational literature of pharmacy[3,4] as a suitable basic biology course for pharmacy education. If the course carries 8 units of credit it is obvious that there has to be a departure from the classical presentations of both zoology and botany. Although anatomists and physiologists are not likely to agree, there appears to be good reason to explore further the educational usefulness of General Biology in the pre-professional curriculum in pharmacy and it would seem desirable to have member colleges who have access to such instruction experiment with it and report their experiences. One obvious danger in such a general course is that the course content or the emphasis in presentation might fail to maintain the educationally-dictated proportions of botany and zoology indicated by pharmacy needs. If such imbalance should occur the course would almost surely fail to achieve its objective. However, if an acceptable course were available, say 8 semester unit credits, it would allow greater flexibility in the total program.

---

[2] Dille, J. W., Chairman's remarks, session on Current Concepts in Psychopharmacology, 1957.

[3] Deno, R. A., The Role of the Biologic Sciences in the Development of Pharmaceutic Service, Section I. General Biology, Anatomy, Histology, *Am. J. Pharm. Educ.*, **17**, 401(1953).

[4] Daniels, T. C., Optimum Prerequisites for the Undergraduate Course in Pharmacology and Toxicology, *Proceedings of Teachers' Seminar on Pharmacology, 1957.* In press.

Pharmacy educators are now faced with the necessity of revising their curricula in keeping with the adoption of the 5-year program. Their choice is limited to one of the following three programs:

1. One year of pre-professional education preceding a four-year professional curriculum.
2. Two years of pre-professional education preceding a three-year professional curriculum.
3. An integrated five-year program.

The educational advantages of a program strong in general education and foundation must be weighed against those of one more strictly professional in its content. On the assumption that in the future the pattern of pharmaceutical education will be two pre-professional years followed by a four-year professional curriculum, the problem presents itself in still another form: to which will it be easier, both educationally and administratively, to add an additional year? The evidence at hand supports the contention that the 2–3 program is educationally more sound than the 1–4, and also that it will be easier and more logical to add the additional year at the professional rather than at the pre-professional level. Support for the above statement is threefold.

First: in any professional field education of man as a whole should precede the education of man as a professional. Where other professions seemingly have acknowledged this fact, Pharmacy, at least by its actions, has chosen to ignore it.

Second: without the proper complement of basic science or fundamental courses as a basis, it is difficult to see how a satisfactory professional curriculum can be developed. A strong professional curriculum based on a weak or incomplete set of fundamentals is destined to remain weak. The total educational program for a profession can be no stronger than its foundation.

Third: a professional program following two years of general education will be more easily administered. Adequate pre-professional training will eliminate the need for courses in the basic sciences in the professional school thus permitting the administrator greater flexibility in schedule arrangement.

Conclusion

Pre-professional education in Pharmacy, as in other professions, has evolved because of an already overcrowded professional curriculum, one that cannot possibly accommodate those fundamental courses of study upon which the professional program is built. Such overcrowding has meant almost virtual exclusion of the elements of general education from pharmaceutical education. A pre-professional program of two years will strengthen the background of students admitted to schools of pharmacy, will offer a reasonable program in general education that will enrich and nurture pharmacists individually and collectively, and will provide an automatic screening of students admitted to professional study. The long range effect of this program will be an upgrading of the profession. ■

APhA STUDENT BRANCHES

Faculty Advisers

Inspirational and conscientious guidance afforded student members of the APhA Student Branches in our Colleges of Pharmacy by mature Faculty Advisers is extremely important to the future of the profession of Pharmacy

Clark A. Anderson
Ferris Institute

Morris C. Andrias
Drake University

Martin Barr
Philadelphia College of Pharmacy & Science

Harold M. Beal
University of Connecticut

Ignatius J. Bellafiore
St. John's University

Alex Berman
University of Michigan

Ralph Bienfang
University of Oklahoma

L. E. Bingenheimer
University of Tennessee

Frank W. Bops
Ohio State University

Willis R. Brewer
University of Arizona

Earl T. Brown
University of North Carolina

Donald B. Clark
University of Buffalo

Dale H. Cronk
Medical College of South Carolina

Ralph V. De Nuzzo
Albany College of Pharmacy

Austin A. Dodge
University of Mississippi

Melvin F. W. Dunker
Wayne State University

Herbert M. Emig
University of Illinois

Robert V. Evanson
Purdue University

Laurence F. Ferring
Xavier University

S. D. Fouts
University of Georgia

William C. Fiedler
University of New Mexico

Lyman D. Fonda
Brooklyn College of Pharmacy

Herman C. Forslund
Oregon State College

Norman H. Franke
Alabama Polytechnic Institute

Robert D. Gibson
University of Nebraska

Willard Hadley
University of Minnesota

J. Lasier Hayman
West Virginia University

Arnold J. Hennig
University of Colorado

Alain C. Huitric
University of Washington

Douglas Johnson
Southern College of Pharmacy

Marcus Jordin
University of Arkansas

Joseph H. Korn
University of Florida

Wendle L. Kerr
State University of Iowa

Harry Kostenbauder
Temple University

Ruth C. Kroeger
Texas Southern University

Leo Lathroum
University of Puerto Rico

Dean E. Leavitt
University of Maryland

Floyd J. LeBlanc
South Dakota State College

C. O. Lee
Ohio Northern University

August P. Lemberger
University of Wisconsin

Robert M. Leonard
George Washington University

Kenneth J. Liska
Duquesne University

Lowell R. Macy
University of Kansas

Charles F. Martin
State College of Washington

Frank W. Martin
Northeast Louisiana State College

John W. Martin, Jr.
Butler University

John F. McCloskey
Loyola University

Joseph D. McEvilla
University of Pittsburgh

Frank L. Mercer
St. Louis College of Pharmacy

Donald B. Meyers
Butler University

Orville Miller
University of Southern California

A. H. Mutick
University of Tennessee

Eino Nelson
University of California

William Nelson
Creighton University

Milton L. Neuroth
Medical College of Virginia

David W. O'Day
University of Wyoming

Richard E. O'Neill, Jr.
North Dakota Agricultural College

Charles F. Peterson
Temple University

J. M. Plaxco, Jr.
University of South Carolina

Herbert C. Ranbenheimer
New England College of Pharmacy

Carl C. Riedesel
College of the Pacific

John W. Schermerhorn
Massachusetts College of Pharmacy

Donald O. Schiffman
Idaho State College

Robert Schlembach
University of Toledo

Charles Schwartz
Southwestern State College

A. C. Smith
Ohio Northern University

William B. Swafford
University of Tennessee

Ewart A. Swinyard
University of Utah

Carl Swisher
University of Cincinnati

R. L. Van Horne
Montana State University

John L. Voigt
Rutgers University

Matthew T. Waters
Florida A & M University

Marion G. Webber
University of Houston

William L. Weingold
Columbia University

Alfred J. White
Fordham University

Lyle W. Willits
University of Kansas City

Charles O. Wilson
University of Texas

John E. Winter
Howard College

Theodore B. Zalucky
Howard University

Basic operational principles for an important phase of pharmaceutical education are discussed under the title

Pharmacy **Internship** *Training*

by Louis W. Busse

It seems hardly necessary to justify the importance of internship training as a phase of pharmaceutical education; however, the apathy exhibited by the organized groups of Pharmacy toward this phase of pharmaceutical education during the past years leads one to believe that they still are not ready to give it the attention it needs. However, the arguments for having a highly organized and directed internship training program, as a part of the education of a pharmacist, strike at the very heart of the profession.

Pharmacy is a profession where certain technical and manipulative skills are necessary qualifications for the practice of the profession, where mature judgment is essential in matters sometimes influencing life or death, where decisions regarding medication on an interprofessional basis are made, where matters of an extremely confidential nature between physician, patient, and pharmacist are always present, and where professional relationships with the public and interprofessional relationships of all types are entered into. In addition, a body of knowledge is considered to exist in the practice of the profession which does not, and probably should not, exist in the academic area but which should be learned from actual experience. To have Pharmacy practiced at a relatively high level throughout the profession, this area of pharmaceutical education will have to be given the same serious attention that has been given the academic area the last 10 years.

DR. LOUIS W. BUSSE, Associate Dean, School of Pharmacy, University of Wisconsin, received his B.S. (1936) and his Ph.D. (1940) degrees in Pharmacy from the same school. He has taught pharmacy there since 1940 and has been Associate Dean since 1954. He was Drug Analyst, Office of Civilian Requirements, War Production Board, 1944–45. Dr. Busse is a registered pharmacist in the State of Wisconsin and has long been active in AACP affairs. He was a member of the Subcommittee on Pharmacy for *Pharmaceutical Survey*, 1947–49 and has won the Mortar and Pestle Award for service to Wisconsin Pharmacy and the Ebert Award for research contributions in Pharmacy.

If the practice of Pharmacy as a health profession is important in our society, then there must be something about the manner, the attitude, the relationships, necessary observations to be made, necessary judgments to be made, etc.; in which a young person entering into the practice of the profession must be orientated. If this is not true, then the corollary must be established that whatever function the profession performs in our society is not essential. If it is true, then its importance as a phase of education should be realized and it should be given the attention and direction it needs.

Internship training programs must satisfy certain conditions or principles if they are to be successful as an educational experience. The following is a list of those conditions which are considered essential to a successful internship program and which might be labeled "Guideposts for Internship Training Programs in Pharmacy."

1. An internship training program should be outlined in terms of the educational objectives to be achieved. The training program should be organized to best achieve these objectives.
2. The teacher or "preceptor" is the key to any successful internship. Therefore, only the most qualified of the profession should be permitted this responsibility. A successful training program must include a plan of selecting, inviting, or approving preceptors who will be willing to shoulder this responsibility for the profession.
3. The "most qualified" of the profession's facilities or institutions must be utilized to orient the intern to the practice of his profession. A successful training program must include a plan for the selecting and approving of the facilities before an intern may acquire his training in a certain institution or pharmacy.
4. The quality of the internship training program should be evaluated. The profession should know whether the program is accomplishing its educational objectives or not. It should be evaluated in terms of achieving educational objectives and not only in terms of meeting legal requirements.
5. A position of "Director of Internship Training" should be created in each State. This position should carry the duties of originating and coordinating the educational objectives to be achieved during the period of training. The person in this position should be one who is thoroughly familiar with pharmaceutical education, with educational principals and processes of a general nature, and with the requirements of the profession.
6. The responsibility for seeing that a proper introduction to the practice of the profession is achieved is the responsibility of the profession—not of the intern, as is the case in our present day program.

If internship programs, based upon these "principles" were put into effect, the level of professional practice would be raised steadily and constantly over the years to follow.

The objectives to be achieved during an internship training period have been outlined by a curriculum committee of the AACP and reported in the *Journal* of that organization. The objectives as listed in the committee's report are as follows:

1. Gain ability to establish and maintain proper customer-pharmacist relationship.
2. Gain ability to establish and maintain proper interprofessional relationship.
3. Gain ability to establish and maintain proper intraprofessional relationship.
4. Gain confidence, efficiency, and dispatch in prescription practice.
5. Gain familiarity with brand names and package types of drugs, proprietaries, bacteriological, and biological specialties.
6. Gain familiarity with products classed as drug sundries and health and sick room supplies.
7. Become acquainted with the mechanics of ordering and keeping inventories of narcotic drugs.
8. Learn a method and the importance of establishing an efficient routine for handling the essential details of store housekeeping.
9. Gain information about the seasonal recurrence of demands in medication and merchandise and the importance of anticipating such demands.
10. Learn the importance of buying merchandise in proportion to the sales volume of the store so that the inventory remains in balance.
11. Gain in ability to make decisions regarding purchasing, store arrangement, and financing.

To the specific objectives listed by the committee should be added the more general objective of this training period, i.e., to give the young intern the opportunity to become a mature and responsible professional person under the guidance of a pharmacist who is rich in the wisdom of the profession and one who has a strong sense of responsibility to the profession, to the related professions, and to the public.

The proper administration of this type of program is essential if it is to be successful; for one of the real purposes of the directed program is to achieve some degree of uniformity of training among

the interns. This can only be achieved if the preceptors have a common approach to their responsibilities to the intern and have a common outlook in the matter of professional practice.

The following is one method of administration which is being given considerable attention in Wisconsin and one which seems quite feasible to place in operation. This procedure came out of the recommendation of a Joint Committee on Internship Training created by the Wisconsin State Pharmaceutical Association. This committee consisted of members of the State Board of Pharmacy, the University of Wisconsin School of Pharmacy, and the Wisconsin State Pharmaceutical Association.

The State Board of Pharmacy should appoint an advisory committee on internship training which would consist of representative members from the School of Pharmacy and the State Pharmaceutical Association. This committee would serve the Director of Internship Training in bringing the educational resources of the school and the profession as represented by the Association to his aid and thereby create the cooperative atmosphere necessary to the success of this program.

The State Board of Pharmacy should create the office of Director of Internship Training and employ a qualified person capable of assuming the responsibilities of this office. The director would be responsible for organizing the program outlined with the help and approval of the Advisory Committee. The program then would be submitted to the State Board of Pharmacy for its approval.

In order to assure a common approach to the problem of instruction of the intern, the preceptors should be made aware of their responsibilities in this regard. This can best be done by having periodic meetings of the preceptors at which time organized plans of instruction could be drafted. Problems which have come up could be discussed and solved, and similarly plans for improvement of the program could be drawn up based upon the knowledge of past experience. These meetings should be held at least twice a year, one at the beginning of the internship period and one as it is drawing to a close. These preceptor training programs might be sponsored or supported by the State Association, organized by the Director and the Advisory Committee, and carried out by Extension Services Division of the Schools of Pharmacy.

The intern must also be aware of the professional responsibilities which are his during this period and of his relationships with the preceptor. This should be the duty of Director of Internship Training and he could very easily carry this responsibility out by appearing before the Senior Classes of the Pharmacy Schools and in a series of lectures orient the prospective interns to the program they will be expected to carry out.

The organization of the program of instruction the intern will receive will undoubtedly vary from pharmacy to pharmacy depending on the size of the operation, the number of pharmacists, and whether it is a hospital pharmacy, a prescription pharmacy, or the conventional drug store. It will also vary as to the individual pharmacist responsible for the instruction of the intern in the various phases of the practice. However, in the material covered, there will be uniformity because of the organized program accomplished in the group preceptor meetings. Uniformity will also be assured to a certain extent by the qualifications which are set up for the pharmacy and pharmacist. Such qualifications as these have been suggested for the pharmacy:

1. Minimum number of prescriptions should be filled daily. Such minimum numbers as 20, 30, and even 40 have been considered.
2. The prescriptions should come from a variety of practitioners, practicing in many different fields. A range of specialties in medical practice, as well as a range in general practitioners, should be represented in the types of prescriptions filled.
3. The prescription inventory should represent pharmaceutical practice in its broadest sense, and products and dosage forms of all areas should be in stock for the intern to be acquainted with.
4. A complete inventory of sick-room, invalid and nursing supplies or articles should constitute a division of the prescription department, and this should represent an active area in each store.
5. The pharmacy should be visited by physicians personally, or frequent telephone calls for service from them should be received. It is important that the intern be exposed to this type of physician-pharmacist-patient relationship.
6. The pharmacy should not have an alcoholic beverage department since this is considered incongruous with the position of Pharmacy as a health profession. Certainly it should be limited to those stores exhibiting the pharmacists' alcoholic beverage license only.
7. The pharmacy should be scrupulously clean, and certainly all modern sanitation and hygienic practices should be required at all times.
8. An adequate reference library representing all the sciences upon which the professional practice is based should be a part of the prescription department and available for the intern's use and study.

Qualifications for the preceptor as suggested by many might include the following. The preceptor must:

1. Be engaged in the practice of the profession for a minimum number of years before preceptorship responsibility is permitted. A five-year period has been suggested, and I believe it is the requirement at present in New Jersey.
2. Be a member in good standing of a local, State, and National Association of Pharmacy.
3. Have a clear record of law observance and abide by the code of ethics of the State Pharmaceutical Association and the American Pharmaceutical Association.
4. Not have any illegal or unethical business relationships with members of the Medical or other health professions. These relationships are referred to in the code of ethics of the APhA.
5. Not engage in nonprofessional advertising or use such unprofessional slogans in his advertising as "Only registered pharmacists fill prescriptions here," "Registered pharmacist on duty at all times," or "Only fresh drugs used in your prescription at Jones." The inference that unprofessional or unethical acts are committed by fellow members of the profession in advertising is unethical and should be prohibited, certainly in intern training centers. Other qualifications for the preceptor and the pharmacy might be added as experience in this program would dictate.

The final requirement for the successful operation of this program and one which is necessary to insure the uniformity of training desired is that the total internship training take place after graduation from a School of Pharmacy. This feature assures all preceptors in every state of employing interns of comparable levels of training who have developed to relatively the same stage of maturity. It would also make possible uniform reciprocity regulations. Unless this is made a prerequisite to the adoption of this type of program, the objectives as stated cannot be achieved.

All phases of the profession would have much to gain by the adoption of this type of program of training for its new members. A cooperative venture of this type would bring the State Board, the State Association, and the School of Pharmacy together in a mutual effort toward a common goal. It would permit a much greater understanding of each other's problems and create the basis for harmonious intraprofessional relations. Schools of Pharmacy would theoretically have an opportunity to bring the influence of the School to the profession in a very significant manner and, vice versa, an opportunity for the school to observe the educational and professional needs of the practice to a degree not possible up to now. The final effect would result in a strong stimulus to upgrade the profession. The significant factor here is that the stimulus would now come from the members of the profession themselves (the preceptors) and not from the organized bodies of Pharmacy such as the Schools, Boards, and Associations. Professional practice will be upgraded only when it is the desire of the majority of the members of the profession or at least a highly organized and determined minority. The preceptors when operating under this program for a few years will develop into the latter group. It is sincerely hoped that this presentation will raise considerable discussion among all members of the profession and that steps to initiate an internship training program based upon the principles presented herein will be taken by the groups responsible. ■

Broader curricula and greater opportunity for specialization are trends predicted for

The Future *of Pharmaceutical Education*

by Linwood F. Tice

Pharmaceutical education in the United States, today, is better prepared to meet the needs of the future than ever before in its history. There are many reasons behind this, not least among which are the rising trend of professionalism and the better understanding which exists today between the practitioners of pharmacy and pharmaceutical educators. Another very important factor is the excellent organization of pharmaceutical education as seen in the American Association of Colleges of Pharmacy and the support given its needs by the American Foundation for Pharmaceutical Education. Had the situation fifty years ago been as conducive to progress as it is today, the profession of Pharmacy would have been saved many of its disappointments and some of the reverses which it has experienced.

Recent Progress

While it is not the purpose of this article to dwell upon the past, it would be a serious omission if proper credit for recent progress in pharmaceutical education were not given the American Foundation for Pharmaceutical Education, the Pharmaceutical Survey which it made possible, and the implementation of many of the Survey's findings by numerous pharmaceutical organizations, including the American Council on Pharmaceutical Education.

The upgrading in our educational institutions which the Council has brought about has been one of the most significant accomplishments viewed from the standpoint of long range results in the quality of our profession. Had it not been for the financial support from the Foundation and the encouragement and self-evaluation which this made possible, it is doubtful whether some of our pharmaceutical educators would have been roused from their seeming apathy and given sufficient courage to demand the drastic curriculum revision which present and future needs dictate. This action, initiated in the American Association of Colleges of Pharmacy and supported by the AMERICAN PHARMACEUTICAL ASSOCIATION, the National Association of Boards of Pharmacy, and other national groups, may well prove to have been a turning point in the history of our profession.

For the first time in the history of pharmaceutical education, our educators took the necessary step to change what had always been almost pure technical education into a program which will train pharmacists to be not only expert technicians but educated men and women better prepared to mingle with other professional people, render community service, and fill their proper niche in society. This great step forward may well prove to be but a beginning. Only time and the future will answer this question.

Looking Ahead

Pharmaceutical educators, if they are to have the vision which their task requires, must look far ahead and try to picture the profession both as it should be as well as see it as it is most likely to be. They must have high idealism and still not get too far removed from reality. Of one thing they can be certain and this is that change is inevitable. Some of the changing patterns of practice they are and will be in a position to influence, retard, or encourage. Some changes are beyond the scope of their influence but they must be reckoned with long in advance if their graduates are not to be severely handicapped when the "future" becomes "today."

A number of clear-thinking leaders have already mapped out many of the changes which can be expected in Pharmacy in future years. One of the keenest analyses of the future of Pharmacy was recently made by Dr. W. Paul Briggs in an address given at the inaugural ceremony of Chancellor Litchfield at the University of Pittsburgh. Over the years, Dr. Briggs has been in an admirable position to assess and evaluate Pharmacy since he has seen it from almost every vantage point. His clarity of vision is matched only by his clarity of expression and this excellent address deserves attention by every pharmacist and pharmaceutical educator in the country. Most—if not all—of his predictions will be subscribed to by pharmaceutical educators in the United States.

The Professional Trend

The practice of pharmacy in the United States is already undergoing drastic change. While at one time, the all-around, typical, corner drugstore was the principal place in which Pharmacy was practiced, it is becoming of less and less importance. The practice of pharmacy in the hospital, in the clinic, in the strictly professional pharmacy, and other similar places continues to increase year by year. There is nothing which seems likely to change this trend. Many factors have contributed to this rapidly changing picture. Today, people are more conscious than ever before of their health needs, and the modern medicinals now available grow more and more important in the successful practice of medicine and all its specialties. Add to this the rapidly expanding population with many more "youngsters" and "oldsters," and the astronomical increase in the ethical drug industry becomes understandable. The complexity and the cost of these new medicinals have encouraged prescription writing and given Pharmacy its "new look."

The Merchandising Trend

There is also a growth of the merchandising type of drugstore often located in a shopping center where the convenience of the customer to do all shopping in one location is the prime consideration. Such stores, while they usually have a prescription department, also have many other kinds of merchandise—often on self-service—so that speed and self-selection govern the operation. This type of establishment may also be expected to increase since it is in line with the modern trend of shopping in a single center where parking is easy and all kinds of merchandise makes one-stop marketing possible. The growth of the strictly professional type of activity and the large supermarket

Dr. LINWOOD F. TICE, Director of the Department of Pharmacy and Associate Dean, Philadelphia College of Pharmacy and Science, was graduated from P.C.P. &S. receiving the Ph.G. in 1929, B.Sc. in 1933 and M.Sc. in 1936. He became a registered pharmacist in 1930. In 1930–31 he was Professor of Pharmacy at Baylor University, Dallas, Texas. He is the Editor of the *American Journal of Pharmacy* and technical editor of *Pharmacy International* and *El Farmaceutico*. In 1954 the St. Louis College of Pharmacy and Allied Sciences conferred upon him the honorary D.Sc. degree. He was President of the AACP in 1955–56.

type of operation will undoubtedly take place at the expense of fewer pharmacies of the type that we have long known. In the over-all picture, this may prove a boon to Pharmacy since, in many large urban areas, there are too many poorly stocked, sub-marginal pharmacies where the opportunity for rehabilitation and professional stature no longer exists. While their closing may cause some temporary hardship on the proprietor, the long range effect on the profession will be good. The strategically-located community pharmacy, however, will always be an important area of pharmaceutical activity since, in many locations throughout the country, it is the only type of store serving all the pharmaceutical and other related needs of the surrounding community.

Future Educational Needs

This diversity in the kind of pharmaceutical practice that graduates in pharmacy must be prepared to meet places some very distinct responsibilities in planning a pharmaceutical curriculum. In addition, it must be remembered that an increasing percentage of our graduates enter manufacturing, control, sales, research, teaching, and other types of work. While the curriculum should permit some specialization to make possible the type of training needed in a given kind of establishment or pharmaceutical occupation, it must not be so specialized that some graduates fail to get the basic professional training required of all pharmacists. Specialized training must also not be permitted to crowd out the general education which, finally and after great effort, is now to be made part of the pharmaceutical curriculum for it was this need which was cited most frequently by those urging the adoption of a five year program in pharmacy.

In the specialization recommended for those who will serve in the strictly professional type of pharmacy, in the clinic, or in the hospital, no effort must be spared in training the pharmacist to be the drug specialist which he must be if he is to fill his rightful place on the health team. A man so trained is quickly recognized and accepted as the physician's ally and his services and advice prove of greater value to the medical profession year by year. The increasing complexity of modern drugs makes it imperative that the physician have the services of some specialist in the area of pharmacy just as he must call upon the services of other specialists whether they be pathologists, radiologists, or any one of the other experts around whom the modern practice of medicine is built. We must see that the curriculum in pharmacy gives more stress to pharmacology and a complete understanding of modern medicinals. Other complementary courses in this direction are growing in importance. Only a few years ago, it was only an occasional institution that gave pharmacy students biochemistry. Today, it is found as a part of the curriculum in almost every institution. Physiology and pharmacology should be given increasing emphasis at the expense of somewhat less concentration in the areas of analytical chemistry, botany, and pharmacognosy.

Since it is evident that almost all pharmacists must understand something about inventory control, accounting, and other modern business methods, such courses must be a part of pharmacy administration. A somewhat greater emphasis on these courses is needed, particularly by those who enter the large merchandising type of store since frequently the pharmacist-manager must operate the entire establishment. Even the hospital and clinic pharmacist needs some business training since a pharmacy by its very nature must be conducted in a business-like manner if costs to the patient; consumer or hospital are to be reasonable.

A New Concept

Probably the most important new concept which must be a part of modern pharmaceutical education is training the future pharmacist to be the best qualified person in our entire distributive field to sell home remedies, sickroom supplies, household disinfectants, insecticides, and the many other related products which by their very nature properly belong in the sphere of retail pharmacy. While it is entirely in order for organized pharmacy to oppose the unrestricted and promiscuous sale of medicinal products in all types of retail outlets, the only sure way to reserve such products for Pharmacy is in the quality of service which is rendered by pharmacists in their sale. The public is wary of purchasing highly specialized merchandise from those who are relatively ignorant concerning its nature. They have learned this by many unpleasant and unsatisfactory experiences in purchasing all sorts of complex things, including television sets and automobiles as well as drugs. The pharmaceutical curriculum must prepare the graduate to be truly expert in many areas now only lightly touched upon. While a knowledge of home remedies is thoroughly gained in college today, not all colleges present courses training their students to understand surgical supplies, sickroom needs, insecticides, veterinary products, and the many other things which belong more in the pharmacy than much of the merchandise and bric-a-brac now found there.

Increasing Specialization

It may well be that all of the things that will be required of the future pharmacist cannot be compacted in a single course and the time may come when the increasing need of specialization will require a still further increase in the length of the curriculum. Indeed, it would not be surprising if the six-year program leading to a Doctor of Pharmacy degree now adopted on the West Coast might someday become the national pattern. This, of course, would not preclude students interested in teaching and research from working also toward the Doctor of Philosophy degree with some work toward both degrees taken concurrently during the fifth and six years.

Essential Considerations

The educational requirement for pharmacists, however, must not be advanced more rapidly than the profession can be adapted to it. At the present time, Pharmacy is not fully meeting its manpower requirements in spite of the opposing viewpoint of some who think otherwise. While there may be numerically enough pharmacists in the country to serve basic needs, there are not enough young men and women leaving our schools today to fill the many positions open to them. One of the chief reasons for this is the expanding opportunities for the modern graduate other than in the retail pharmacy. These opportunities are certain to increase even more in the future when it becomes apparent to prospective employers that they have in the graduate pharmacist a broadly educated person as well as a specialist.

Pharmaceutical educators, in addition to planning a curriculum to meet future needs, must also do everything possible to bring into the field young men and young women with ability, imagination, and enthusiasm. To be successful in this program of high quality recruitment, it is imperative that practicing pharmacists themselves have enthusiasm and joy in their work and transmit this feeling for their profession to others. Our profession is not as bleak, unrewarding, and unhappy as it is sometimes painted by pharmacists themselves. It is unfortunate and even tragic when a young man is discouraged from entering the profession by such an attitude on the part of his pharmacist.

Pharmacists, pharmaceutical educators, and all those who wish to see a bright future for the profession must have faith and vision. It must be based on a firm belief that our profession is presently making the greatest progress in its history and that we can look forward to a golden era in human affairs in which Pharmacy's place will be a happy and rewarding one. ■

Health services are the most powerful tools for international understanding

HEALTH for PEACE

by Howard A. Rusk*

On a visit to the Soviet Union in September, 1956 with Paul Dudley White and three other colleagues it was interesting to find that for the first time the Soviets are beginning to feel the pinch of degenerative disease. In the past their mortality from infectious diseases has been so high that this has not been a problem; but now using modern tools and with a training of 27,000 young doctors each year who are being scattered through the hinterland of that country compared to our 7000, the mortality rates have dropped 50%. Now they are extremely interested in the problems of hypertension and two years ago developed a register for hypertensive diseases and degenerative cardiovascular disease and report that already they have more than 1,500,000 people in the Soviet Union on this register, and it is my feeling that they haven't even started.

I don't like to use the term "underprivileged." A friend of mine this week, a distinguished industrialist, said, "I had a very interesting experience last week." He was at a meeting in Washington and sat next to a colleague from Indonesia where his company is very much interested in developing their natural resources, and the speaker on foreign problems continued to talk about "underprivileged" and "backward" countries. He said:

"I could see my friend becoming more and more tense and after the meeting we walked the streets of Washington for half the night. He said 'This is very hard for me to take. Backward in what ways? In numbers of bath tubs, in numbers of automobiles, in miles of paved roads, in refrigerators? Yes; but my country has given much to the culture in music and our people enjoy it. Much of the whole concept of modern dance has come from my country and it means much to my people. Literature, painting, the arts—in those we are not backward.' "

So you must define the term "backward." I don't know what term to use. I would like—maybe I will just have to describe that part of the world that hasn't been privileged to have all of the material things that we have had nor the knowledge with which to develop them. In those countries the life expectancy is not 70; the expectancy is nearer 30. Here in the United States every day in the professional journals and newspapers you can read some item about the closing of tuberculosis sanitaria because tuberculosis is now on the way to being controlled. It is next to malaria; it is the scourge of the world when you go into these parts of the world.

Korean Conquest

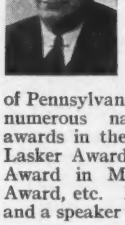
I think possibly I could bring it best into focus as to the problem by telling you what was in Korea on my first visit when the war was still on in '53. If you think of a town of 25,000, any town, so that you get the size into your mind, and if you destroy a third of the houses and unroof another third and knock out the water supply and the plumbing so that all water has to be carried from the nearest infected stream, whatever distance that may be, and in this town of 25,000 people you have just the basic calories to keep alive and enough coal to heat one meal a day, nothing for body heat, and in this town that I describe to you there will be 1,450 patients with tuberculosis; there will be 24,000 with some type of skin disease, the respiratory infection rate will be 10 times that in this country, there will be between 75 and 100 people suffering from some stage of Hansen's disease; to meet the health needs of this community there will be one poorly trained general practitioner, no pharmacist, and a nurse for every two such cities.

That was the condition that we found originally in Korea. I want to take this opportunity again to thank the pharmaceutical profession for all they did for the American Korean Foundation in helping to solve this problem. You gave us everything from medicated cough drops to streptomycin. You opened your doors for training.

I can report that when I was there in November the first four young biologists who came over here to become immunologists were back in Korea. They now have their own laboratory which turns out an adequate amount of typhoid vaccine and smallpox vaccine and typhus vaccine and tetanus and diphtheria vaccine, and so on, to meet the needs of these people. You helped them learn the techniques so they can help themselves, and even today, four years later, there are still more than 200 young doctors and at least a dozen pharmacists in the United States in training—more than from any other country in the world, except the Philippines.

When I was there in November, I went to the Chungnang University, and there through a grant from one of your distinguished leaders in Pharmacy, the late Gustavus Pfeiffer, through his foundation a great new pharmacy school has been built up, and there were 500 students there. It was November and the day I was there there it was 10° above zero, no heat in the building; a microscope for every 10 students; a beautiful building by Korean standards; the most avid learners that I think I have ever seen. These kids, cold as they were, never looked up when our entourage came through to inspect the

* Presented to the Second General Session of the APhA Convention, New York City, May 2, 1957. An unedited transcription of an extemporaneous talk.



DR. HOWARD A. RUSK, Professor and Chairman, Department of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center since 1946 and Associate Editor of *The New York Times*, received his M.D. degree from the University of Pennsylvania in 1925. He has received numerous national and international awards in the health field, including the Lasker Award, the Criss Award, Annual Award in Modern Medicine, Research Award, etc. Dr. Rusk is a prolific writer and a speaker in great demand.

building. They were so interested in what they were learning.

They are learning more than just the ordinary pharmaceutical techniques as you know them. They are learning to be the health assistants in the communities in areas where there is no doctor and there is no nurse. They are learning to examine sputum for the tubercle bacilli and to run urines and to use the microscope for a thick smear in malaria and to examine the stool for parasites. They are going to be the first line of defense in the health services of that country. Again, I want to thank you for what you have done to make this possible.

The strongest tools in the world today as far as international understanding is concerned lie in the field of health.

Polish Progress

There was news this morning in the headlines about Poland. I made my first mission abroad into Poland in 1949—a very bad time—three weeks after Mr. Field disappeared at the airport, the one who is still behind the Curtain. There was terrific anti-American feeling in Poland at that time. They had forgotten the massacre by the Russians at Hurtgen Forest. They had put in the back of their minds the four concentration camps, Auschwitz being the largest, where more than 4,000,000 people went to death in the gas chamber. But the thing that was acute at that time that made them so bitter was the fact that they had only 100,000,000 units of penicillin per month for the entire population of the country. The miners' hospital that I visited in Vicari, with 300 traumatic patients, had as their allotment only 5,000,000 units per month for the entire hospital.

Now, this wasn't all justified. We had offered them a penicillin plant and a young man had come over here to try to learn to use it; but he hadn't gotten off the ground, and all the people knew that their loved ones were dying because there wasn't penicillin and in other parts of the world there was plenty.

Well, one of the famous Polish doctors was here last month. He came to the Academy of Orthopedic Surgeons. I asked him about penicillin today and he told me now they had ample but they still were short of streptomycin and their patients preferred to pay inordinate prices on the black market for streptomycin smuggled in from the United States or Germany because their product was so painful on injection.

On this trip in 1949, after two days, the Curtain opened and my wife and I went all over Poland, some places where our State Department people hadn't been for many years. They had 53,000 amputees in Warsaw alone, two and one-half times our total in the entire World War II in all services. I was able to help them organize a program both for the children and the adults on this mission.

When I left I went in to see the Minister of Labor under whose direction this program operated, and he thanked me for coming and I thanked him. He said:

"This has been a good mission. We have learned much to help us with our amputees, but much more than that, we have learned that Poland and the United States have many common problems. You know, if we could just work on problems like this together, maybe one day we could understand each other well enough to live in peace in the world; and unless we can learn to do that, we are wasting our time."

I said: "Those words are worth a mission to me. Would you give them to me in writing?" He said: "You will have them before you leave."

I left that afternoon and as the train pulled out of the rubble pile that once upon a time had been a station a little nondescript-looking man with a pinched, greenish-black suit stepped out from behind the rubble pile and when the train was in motion handed me the statement.

The Curtain went back down and I didn't hear any news for three years, but two and one-half years ago at Amsterdam, when the International Society of Welfare of Cripples met, the Polish doctor who accompanied me, one of the distinguished orthopedists of the world, and the young social worker who was my translator were allowed to come to the meeting. Six months ago in Poland, a group of dedicated people formed the first voluntary organization in the country to aid the crippled of Poland in order that they might join the International Society for the Welfare of Cripples and take their place with the other nations in the world to learn and to share in knowledge and experience that would help them to solve their problem. We met in London in July, and the two Polish individuals that I spoke of were on the program.

That is progress; that is the understanding that comes with a level where we can speak the same language.

I have been in Greece, Israel, the Near and Middle East, Korea, the Philippines, Australia, the Soviet Union, South and Latin America, and *I have never gone any place in the world where we couldn't talk about the things that you as a pharmacist and I as a physician talk about without any problems of race or creed or color or geography or politics or curtain.*

Finnish Physicians

On the way into the Soviet Union, I had dinner with two old friends in Helsinki, one the professor of orthopedics and one the professor of pediatrics, and they both told me the same story at different times. The professor of pediatrics is a little fellow about so tall, his name Ylippo. If you are familiar with pediatric literature, you know the name well. They call his hospital the coffee house. It is a magnificent children's hospital; and then next to it a children's castle for chronically disabled children, cerebral palsy, and whatnot. They call it the coffee house because right after the war there was a terrific black market in coffee in Finland. The Finns would not give up coffee. He went to the government and said: "Would you give me a monopoly to sell coffee at a price under the black market for the benefit of my hospital?"

They said, "Certainly."

So he went into the coffee business, and in 30 days the black market was out of business, because whatever the black market price was he dropped 2 cents below and still got 300% profit, and with the profit he built the children's hospital and the children's castle.

These two distinguished Finnish physicians with two of their colleagues had been in Red China six months before with two other Finnish colleagues visiting medical centers. Now some of you possibly have heard criticism in the past about how the Peiping Union Medical College and Pharmaceutical School had been taken over by the Soviets, that this was wasted money. Tens of thousands of dollars it took to train each doctor that graduated from this school. Was it worth it? These two gentlemen told me this: In every medical center that they visited talking with hundreds of professional people, they did not hear one single word from the professional people that they met of criticism about the United States of America. They were still grateful to us for what we stood for and what we had made possible for them—continuing bulwarks of democracy in the far corners of the world, who still believe because they learned many years ago—but they said,

"This can't go on forever. There can't be all poison coming in one side and no antidote from the other. They have to have some knowledge of what the United States is doing and still stands for about the dignity of man and the freedoms that we believe in."

World of Health

When you take the record throughout the world of health, it is an exciting thing. In Greece I learned 5 years ago that after our malaria control program, the rice output jumped by twice the first year. In the Philippines, in November, they told me that after our malaria control program there absenteeism dropped from 33% to 4%.

In Haiti, where we undertook to help the Haitians fight yaws, it was stamped out with an average of one dose of penicillin, with traveling clinics that went into the hinterland, at an average cost of 30¢ per person, of which the Haitian Government paid 20¢.

I am unhappy about the health service in our foreign aid program. I believe that we have not used our imagination where possibly it would have been more valuable than so many dollars. We have spent in the last ten years of our whole foreign aid program less than 1% of the total budget in the field of health. That has amounted to 1¢ per person per year in the United States. I believe health services are the most valuable tools we have as they obtain to the people, something that they can see and feel and relate.

Prosthetics for Peace

I testified before the Senate Foreign Relations Committee of the Senate some months ago, and I proposed a simple program to try. I said we hear so much about this "Atoms for peace" program, I would like to propose a very simple little program and call it "Prosthetics for peace."

Our prosthetics were not very good at the end of World War II, but in ten years' research we now have the finest artificial arms and legs and braces that the world has ever known. Our people are well taken care of. In this "Prosthetics program for peace" I suggested that we would spend the sum of $1,000,000 a year for two years. That is not quite as much as it costs to build one medium bomber. For that sum, this is what you could do: You could furnish 50 missions that would go into countries all over the world like our mission into Poland, who would evaluate, at the invitation of the country, the needs and help them set up an organizational program, a structure, give them the know-how.

After you gave them the know-how, you could bring 400 people over to the United States for training, doctors and technicians working in this field. You could set up four modern tractor trailer units that could go into the far parts of the world and do an on-the-job training program for 90 days in a country, fitting individuals on the spot with American arms and legs, of which this sum would buy the component parts for 10,000. Then the people would see that those who had crawled were walking and those without arms could work and it was done by the U. S., not to make friends, but because we believe in it. We believe in it as a basic tenet of our whole democratic concept that man is dignified and everybody has a right to live and work with what he has to the best of his ability.

This I Believe

I feel that you and I in these tense days of living in a world that is technologically precocious and spiritually adolescent have a great, great opportunity, but with it a tremendous responsibility. I tried to put it down once in writing and I found it very hard, and I worked a long time on it. I want to read this to you and tell you two little stories and then I will conclude. I wrote this for Edward Murrow's "This I Believe." It says it in the shortest way that I know how to say it:

"I can't remember when I didn't want to be a doctor, even as an adolescent when I scrubbed floors and ran errands at the local hospital in order to smell ether and go on rounds with the country doctor. Surgery did not spell glamor in medicine to me. It was people—sick people, their suffering, their problems, and their victories that challenged.

"It has been a rare privilege to be a doctor in medicine's golden era, for more scientific advance has been made in the last three decades than in all time heretofore. But I have found it impossible to ignore the fact that these great advances have posed new problems. Crippled children who have died early in life in the past now survive. They want to grow and work and love and be loved. I have heard old people to whom we have added these years, ask 'For what? The shelf to wait for death? Or an opportunity to live and work in dignity as long as we are able?'

"Millions of veterans throughout the world who have scarred their minds and given parts of their bodies to war have more than earned their right to live and love and work and to know that their sacrifice has at least been one small stone that is being used to build a better world. Sick people throughout the world ask their God, 'Why must I suffer?' Possibly the answer comes in the work of the potter. Great ceramics are not made by putting clay in the sun. They only come from the white heat of the kiln. In the firing process some pieces are broken, but those that survive the heat are transformed from clay into objects of art. And so it is, it seems to me, with sick, suffering and crippled people. Those who through medical skill, opportunity, work, and courage survive their illnesses or overcome their handicaps and take their places back in the world have a deathless spirit that you and I can hardly measure. They haven't wasted their clay. Because of this experience they have a desire to share that is almost a compulsion. It matters not whether they be a physician from India, a Zionist from Israel, a Greek veteran or a Pole disabled in a mining accident—all want to share the understanding they have gained through suffering by helping those who have suffered.

"I believe that this basic and inherent desire of man to do something for his less fortunate fellow transcends religious dogma, political belief, and geographical barrier. If we could only use this universal happening, we would have a tool to unravel the babel of tongues and an instrument which would penetrate any iron curtain or closed boundary.

"It does not seem strange to me that the sick should turn to those who have suffered for their greatest comfort. So in a sick world it is not strange that we turn to those who have been ravished by suffering and disease for a common language. If we could start to work here together on a program where all of us had the same goal, it is more than possible with God's help we could find the solution for living together in peace. This I believe."

Philippine Paraplegics

Let me tell you what you can do for so little. In the Philippines in November, 1956, I went through the orthopedic hospital in Manila. I have never seen anything like it except in wartime Korea. Two adults in the bed were common, three children in the bed the rule, and an operating room not larger than 30 × 30, four major surgical procedures under general anesthesia going on at the same time, the patients housed in wooden huts, buildings, part of the mental hospital on the grounds because their hospital had been completely destroyed.

Going through this building I saw 120 paraplegics. Some had been there longer than 10 years simply because they had no braces. They had a little brace shop. They had a man who was skilled. They had some tools, but they had no patterns and they had no raw material.

I was deeply touched by seeing these paraplegics out on the lawn exercising, strengthening their muscles to be able to walk, without any hope of ever having the opportunity because there were no braces.

Some friends in industry, believing that the world should know that American industry is not just interested in selling its product but in those who make it and those who buy it, had made possible some funds, modest funds, for me to use in the case of great need, if I saw it on this trip. I turned to the head of this hospital and said, "Some friends," and described why they had done it, " have made it possible for me to say to you—and I am deeply impressed with what you are doing with nothing— that within 60 days you will have patterns and raw materials and at least 300 used sets of braces and artificial arms and legs that you can modify for these people. In 60 days they will be here."

He said, "Why?"

I said, "Because in the United States we want to share with the world."

I thought he was going to weep. The news spread like wildfire over Manila. The leading editorial in the morning paper, on the front page, was about this wonderful gift that was going to happen. The leading editorial in the evening paper was about the same thing, and President Magsaysay a great friend of the people, invited me to come to the palace so he could personally thank me for helping his people.

They have been delivered now. The patients are up and walking, and the whole thing cost only a little over $1,000.

Juanito Lopez

I will tell you in conclusion the story of one person who says this better than one million words. It is a little boy down at the Institute for Physical Medicine and Rehabilitation named Juanito. He is from Bolivia. Two and one-half years ago at a meeting a young doctor came up to me and said:

"I am just back from a teaching mission in Bolivia, and there I saw a wonderful child that I wish could have a chance. He was born without arms and legs. He has four little sensitive fingers that come from each shoulder joint and two normal feet that come from each hip joint. His mother and father are dead. He lives in the mission there and has for the last 6 years. He is 8 years old now. He gets every place by rolling, like a little ball. He is very bright. Could you possibly help him?"

I replied, "I don't see how we could. We have no budget and I don't know how we would get him up here, but send the records and send the pictures; you never can tell."

On this day I was late for an appointment with the secretary of a distinguished man. She was waiting in my office and my mail pile was there and the case report and the pictures of this child were on top. She couldn't help but see them. When I came in, she asked me about it and I told her the story about as I have told it to you. She said:

"Well, he will come. I have been fortunate in my employment all these years. I have saved my money. I have no family. This child will come and I will adopt him while he is in the United States."

Panagra flew him up and he landed about three weeks later with two words of English—please and thank you—and a grin from ear to ear, all alone in the world. Two weeks before he came up, the vice president, who is now the President of Bolivia, was in New York and I had him and the Ambassador to the U.N. down for lunch. They all knew about Juanito and they were eager to learn of his plans. In the middle of the lunch I threw the bomb on the table and said, "If we bring this boy up here, it is going to cost you a very large fee," and they winced and I said, "A great fee." They said, "What is the fee?" I said:

"The fee is this: If we bring him up, the promise of two things; first, when he goes to your country, he will have the best education your country affords; and, second, if we demonstrate what can be done with the most severely disabled child in the world, you will set up a national rehabilitation center in LaPaz."

He didn't hesitate a second; he said, "Doctor, you take the boy; we pay the fee."

Juanito is a little boy now walking on his fourth set of specially designed prosthesis. He has an electric wheel chair that he can whizz around any place he wants to go, he is in the fifth grade in school—a great child.

Several months after he first came, the story of this was written in *Newsweek*. About three weeks later, the editors got a letter postmarked Tampico, Mexico. It said:

"Congratulations on your story of Juanito Lopez, but why did you publish it under 'Medicine'? Why didn't you publish it under 'International News' with that $75,000,000 give-away to Brazil? We just came from Brazil, and nobody thanks you for the $75,000,000. However, when we were in Bolivia this time, something new happened. Strangers came up on the street, would tap us on the back and say, 'This is a wonderful thing you Americans are doing for little Juanito Lopez. Thank you so much.'

"I have sailed these seas for 25 years and this little boy, in my opinion, has done more good for our relations and understanding than all the millions we have spent."

It makes me happy to know that you are planning a Pan-American Congress of Pharmacy and Biochemistry. This is the medium through which we learn to understand and help and live as good neighbors.

It is interesting, too, that the large companies in America—the United States—now interested in Bolivia, helping develop their natural resources, plan to send a team of five up from Bolivia for training to go back as a unit when they are trained to set up this center; and when they go back, Juanito will be their first patient.

I conclude with my gratitude for being here, and I would like to share with you the creed of our Institute, written by an unknown Confederate soldier, which means much to all of us who are working in the program. I would like to share it with you, feeling that it might be sometime a comfort to you. We have titled it (it had no title) "A Creed for Those Who Have Suffered." To me it explains the reasons for the unreasonable—that we can understand better than any words that I have read written in modern times.

I asked God for strength, that I might achieve
I was made weak, that I might humbly learn to obey...
I asked for health, that I might do greater things
I was given infirmity, that I might do better things...
I asked for riches, that I might be happy
I was given poverty, that I might be wise...
I asked for power, that I might have the praise of men
I was given weakness, that I might feel the need of God...
I asked for all things, that I might enjoy life
I was given life, that I might enjoy all things...
I got nothing that I asked for—but everything I had hoped for
Almost despite myself, my unspoken prayers were answered. I am among all men, most richly blessed.

3 NEW EDITIONS

●

Soine and Wilson—Roger's Inorganic Pharmaceutical Chemistry

By TAITO O. SOINE, Ph.D.
Professor of Pharmaceutical Chemistry, University of Minnesota

and CHARLES O. WILSON, Ph.D.
Professor of Pharmaceutical Chemistry and Chairman of the Department, University of Texas

New 6th Edition. This book has long been established as a highly useful text for students of pharmacy, and as a practical reference book for pharmacists and chemists who work in the pharmaceutical field. Numerous additions to and deletions from the text make this new edition even more practical than ever before.

New 6th Edition. 705 Pages. Illustrated. $9.50

Bradley, Gustafson & Stoklosa—Pharmaceutical Calculations

By WILLIS T. BRADLEY, A.B., A.M.
CARROLL B. GUSTAFSON, Ph.C., B.S., A.M.
and MITCHELL J. STOKLOSA, Ph.C., B.S., A.M.
of the Faculty of the Massachusetts College of Pharmacy, Boston, Massachusetts

New 3rd Edition. Arithmetic of applied pharmacy is the subject of this book. The practical problems—many of them new or revised—range from conversion and calculation of dosage, dilution and concentration, and the preparation of specified or percentage solutions, to figuring chemical ratios and isotonic solutions.

New 3rd Edition. 325 Pages, 5¼" x 7¾". $4.50

Claus-Gathercoal & Wirth Pharmacognosy

By EDWARD P. CLAUS, Ph.C.
Dean of the Ferris Institute, School of Pharmacy, Big Rapids, Michigan

New 3rd Edition. 731 Pages, 7" x 10". 306 Illus. and 1 Plate in Color. $12.50

LEA & FEBIGER Washington Square Philadelphia 6, Pa.

Enter my order and send me:

☐ Soine & Wilson.....$9.50
☐ Bradley, Gustafson & Stoklosa....4.50
☐ Claus.....12.50

☐ Check enclosed ☐ Bill me

NAME (print).....

ADDRESS.....

CITY.....ZONE....STATE.....

A.P.A. 10-57

On The ECONOMIC SIDE

By Richard R. Dier

Production and Sales of Medicinals in 1956 at New Peak. Antibiotics and Acetylsalicylic Acid Lead the Field

U.S. production and sales of medicinals in 1956 topped all previous records, according to a preliminary report issued by the U.S. Tariff Commission on synthetic organic chemicals. Total output of these medicinals (in bulk) was 89.3 million pounds, approximately 13.5% more than the production of 78.7 million pounds in 1955.

Sales in 1956 totaled 73.1 million pounds, valued at $503,000,000. Sales in 1955 totaled 68.5 million pounds, valued at $465,000,000. This represents an increase of 6.7% in quantity and 8.2% in value.

Antibiotics, in terms of value, were the most important drugs produced in 1956. Total production of all antibiotics for human and veterinary use was 2 million pounds, compared to the 1.6 million pounds reported for 1955. Actual sales for 1956 were 1.7 million pounds, valued at $269,000,000. The sales figures for 1956 indicate an increase of 21.4% in quantity and 11.1% in value over 1955.

Acetylsalicylic acid was the medicinal produced in largest quantity in 1956, as in former years, with an output of 16.6 million pounds.

Vitamin production totaled 7.2 million pounds, compared with 6.1 million pounds in 1955. Sales of all vitamins in 1956 totaled 5.6 million pounds, valued at $78,300,000.

Penicillin salts produced totaled 478 trillion International units, compared with the 1955 total of 344 trillion International units. Sales amounted to 449 trillion International units, having a value of $62,600,000, as compared to 336 trillion International units, valued at $44,000,000 in 1955.

Sulfa drugs amounted to 3.8 million pounds, a substantial increase over the 2.8 million pounds produced in 1955.

Hormone production amounted to 56,000 pounds, as compared to 41,000 pounds in 1955. Sales in 1956 were 26,000 pounds compared with 12,000 pounds in 1955, but the value of 1956 sales declined to $26,000,000 from the $27,900,000 reported for 1955.

Barbiturate production totaled 756,000 pounds, a marked decline from 1955. Sales in 1956 totaled 467,000 pounds, valued at approximately $2,500,000.

Dihydrostreptomycin produced in 1956 amounted to approximately 478,000 pounds, compared with 369,000 pounds in 1955. Sales statistics for 1956 were 410,000 pounds, valued at $17,800,000.

Streptomycin production in 1956 declined to 139,000 pounds from the 154,000 pounds recorded for 1955.

The combined production of other antibiotics, such as oleandomycin, bacitracin, erythromycin, chlortetracycline and chloramphenicol amounted to 477,000 pounds in 1956. Sales were 366,000 pounds, valued at $105,000,000.

Tranquilizers—For the first time, the Tariff Commission reported data on certain tranquilizers. Production of 2-methyl-2-*n*-propyl-1,3-propanediol dicarbamate (meprobamate; Equanil; Miltown) totaled 346,000 pounds, with 1956 sales of 325,000 pounds valued at approximately $2,500,000.

Funds for Health Research

Pharmaceutical manufacturers are among the leading contributors of funds for research in the national health field, according to a survey of corporate contributions to national health agencies made by the National Better Business Bureau.

Women Do Most of the Buying

Recognition of the fact that women have become controllers of the family purse strings and thereby decide whether to buy, what to buy and where to buy, is the gist of an absorbing article entitled "Sell a Women, Sell Her Family" by Ben R. Donaldson, Director of Institutional Advertising of the Ford Motor Co., in a recent issue of *Printers' Ink*. Although the article pertains to automobile selling, retail pharmacy proprietors should be aware of women's motivating influence in our expanding American economy.

According to Mr. Donaldson, the woman shopper controls 70% of the nation's wealth and most probably has a great influence on the other 30%, too. Advertisers, in particular, are aware of this tremendous influence and they reflect it in their advertising appeals to women and in their catering to their needs.

Women today purchase many items for their husbands; consequently, advertisers realize that when they "sell" a woman they usually "sell" an entire family.

Job Recruiting from Colleges

A highly interesting pamphlet on the "Principles and Practices of College Recruiting" has been published by the Chamber of Commerce of the U.S. and the College Placement Council, Inc. This publication outlines proposals to protect college students from high-pressure job recruiting tactics, and at the same time protect employers from the bidding up of salary offers by competitors.

Briefly, recommendations made are:

1. Colleges should provide competent counseling services, available to individual students, as part of their general responsibility for student development.
2. Information provided to students about an employer should be factual, requirements of employment should be clearly understood, and students should know that advancement depends on one's ability and effort.
3. No special bonuses or financial incentives should be offered to influence a student's selection of an employer's offer.
4. Students' acceptance of offers for employment should be made in good faith and with sincere intentions of honoring such employment commitments.

Pharmaceutical Gelatin

Production and shipments of pharmaceutical gelatin in July 1957 declined from the month of June and also from July 1956, according to the U.S. Bureau of the Census. Stocks of gelatin, however, showed a decline at the end of July from the month previous but were considerably higher than July 1956 (see Table I).

Table I—Production, Shipments and Stocks of Pharmaceutical Gelatin (in Thousands of Pounds)

	July 1957	*June 1957*	*July 1956*
Production	142	203	210
Shipments	161	213	311
Stocks (end of month)	1,310	1,329	818

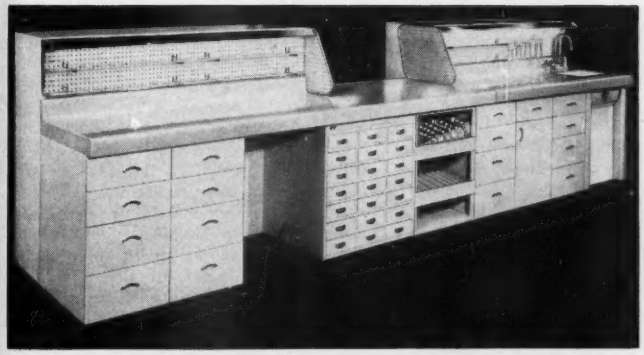
Bulman *gives you*
MORE PROFESSIONAL EFFICIENCY *for less!*

more efficient Rx storage . . .

Drug-a-door (left) fits a standard Bulman wall section, has twin storage doors with adjustable 3 inch shelves. 8 inch cabinet shelves are also adjustable, providing maximum versatility in a single compact unit.

Bay-type shelves (right) give more shelf space in a given area for the pharmacist who prefers his Rx stock visible at all times. Clean 7" deep steel shelves are completely adjustable.

more efficient laboratory . . .



Bulman work counters are planned from long experience to provide maximum efficiency and cleanliness. Counters are one piece, heat-formed Formica from back splash to wide apron. Cabinet and drawer construction is steel with baked enamel finish. Pegboard fittings add final touch of versatility.

more efficient sales area . . .

Bulman steel self-selection equipment is completely adaptable to the varied items in your stock . . . adjusts up or down, level or sloped . . . to provide the extra ease of operation plus attraction that means more business . . . proved by the 31.2% sales increase enjoyed nationally by Bulman engineered and equipped stores. This increase is YOUR profit, since Bulman exclusive advantages cost no more (and often less) than other equipment lines.

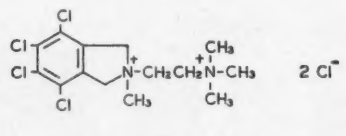
Write, wire or call:

THE Bulman CORPORATION
Grand Rapids 2, Michigan
BULMAN OF CANADA (Store Equipment, Ltd.)
Toronto, Ontario, Canada

NEW & NONOFFICIAL DRUGS

Chlorisondamine Chloride

Ecolid Chloride (Ciba); 4,5,6,7-tetrachloro - 2 - (2 - dimethylaminoethyl) isoindoline dimethylchloride.



Actions and uses. Chlorisondamine chloride, a quaternary ammonium compound, is a ganglionic blocking agent with pharmacological actions similar to those of other agents in this category. It is more potent than the hexamethonium salts and pentolinium tartrate, but less so than mecamylamine HCl. The drug produces a somewhat longer duration of action than does hexamethonium; ganglionic blockade and resultant hypotensive effects generally persist for 8 to 12 hours after a single therapeutic dose. Absorption from the gastrointestinal tract is rapid but, as with the older ganglionic blocking agents, is unpredictable and erratic. Hence, precise control of hypertension is more easily achieved with parenteral injection than by oral administration.

Chlorisondamine chloride is used for the management of the more severe forms of hypertension, including the malignant phase of this disease. When used in adequate amounts, the drug effectively lowers diastolic and systolic blood pressure in most patients. Because of the potency and potential toxicity of this agent, ganglionic blockade should not be initiated with it unless the patient can be kept under close supervision. It should never be used for the treatment of mild, labile hypertension.

Side-effects associated with chlorisondamine chloride are the same as with other ganglionic blocking agents. Blurring of vision, dryness of the mouth, and postural hypotension occur frequently after therapeutically effective doses; urinary retention, especially in older patients with prostatic hypertrophy, is another potential complication. Constipation, which can proceed to paralytic ileus, also must be guarded against. The drug is contraindicated after cerebral vascular accidents or myocardial infarction and in patients with renal or coronary insufficiency, obstructions at the neck of the bladder, or pyloric stenosis.

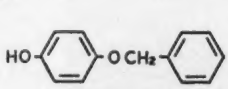
Dosage: Chlorisondamine chloride is administered orally, subcutaneously, or intramuscularly. In general, parenteral injection should be reserved for the initiation of therapy in hospitalized patients with acute hypertensive crises. Oral administration may be used for maintenance therapy in these patients and also for ambulatory patients with less acute forms of hypertension. Dosage by either route must be highly individualized; initial dosage should be low and increased by small increments until the desired therapeutic effect is obtained.

For parenteral injection by either the s.c. or i.m. routes, the initial dose should not exceed 2.5 mg. Depending on response, this may then be increased by increments of 1 mg. at intervals no more frequent than every eight hours. The effective single dosage by the parenteral routes will usually range between 1 and 10 mg. Once hypertension has been stabilized, maintenance by the oral route may be substituted, using approximately twenty times the injectable dose.

For oral therapy in ambulatory patients, the initial dose is 10 mg. taken in the evening. The next day, dosage is increased to 10 mg. in the morning and again in the evening. On the third day, 10 mg. is administered in the morning and 20 to 25 mg. in the evening. Dosage is increased to 20 to 25 mg. in the morning and again in the evening on the fourth day. The morning dose for the fifth day is 20 to 25 mg. followed by 35 to 50 mg. in the evening. Thereafter, dosage is increased in the stepwise fashion indicated previously, by 10 to 25 mg. increments, up to approximately 200 mg. per day, depending on response.

Monobenzone

Benoquin (Elder); *p*-benzyloxyphenol; monobenzyl ether of hydroquinone.



Actions and uses: Monobenzone is a melanin-pigment-inhibiting agent. The depigmenting action of the agent was discovered accidentally when it was observed that the hands of certain workers who used rubber gloves in which it was incorporated as an antioxidant developed areas of hypopigmentation. Monobenzone produces this effect by interfering with the formation of the pigment melanin. It is believed that the drug inhibits the enzyme tyrosinase, thus blocking the oxidation of tyrosine to dihydroxyphenylalanine, a precursor of melanin. It does not destroy or inhibit melanocytes; therefore, depigmentation is temporary and reversible.

Monobenzone has been used for the treatment of various conditions that produce hyperpigmentation caused by formation of melanin. These include generalized lentigo, severe freckling, hyperpigmentation due to photosensitization, and the melasma (chloasma) of pregnancy and adrenocortical hypofunction (Addison's disease). In certain patients with these conditions, the drug may be expected to produce a gradual decrease in skin pigmentation. Successful treatment apparently depends on several factors, such as frequency of application, concentration of the drug, and individual variation in susceptibility. Not all patients experience equally satisfactory cosmetic results; some are completely resistant to the agent. Since the action of the drug depends on the inhibition of new melanin formation, it follows that depigmentation of the skin will not become apparent until the preformed pigment has been exhausted. The speed with which this is accomplished is variable; generally periods of several weeks or months are required. Since exposure to the ultraviolet rays of sunlight accelerates melanin formation under any circumstances, it is advisable to avoid excessive exposure to the sun or to employ one of the topical sun-shading agents when using monobenzone. Depigmentation usually persists for a considerable period after cessation of therapy; however, the drug does not permanently eradicate or cure hyperpigmentation. Thus, modified therapy must be continued indefinitely for continued cosmetic results. The agent is not indicated for mild to moderate freckling, since these lesions are usually seasonal and will fade spontaneously during the winter months. It has not proved of value in the treatment of *café au lait* spots, pigmented nevi, or melanoma.

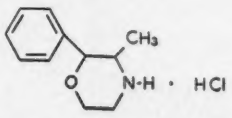
Dermal irritation occurs in a substantial percentage of patients using this drug. This can range in severity from mild erythema to dermatitis. In some patients, this irritant effect is temporary and does not necessitate discontinuation of therapy; in others, an eczematous sensitization to the drug can occur. Although this is not so frequent as simple irritation, physicians prescribing this agent should warn patients about the possible occurrence of skin manifestations. The drug can also produce an excessive, and unsightly, loss of pigmentation in some patients or a patchy, uneven area of depigmentation that may extend beyond the areas desired. There is no evidence of systemic toxic effects from its external use. Although monobenzone appears to be promising as a skin depigmenting agent, further study is necessary to determine its ultimate usefulness and safety.

Dosage: Monobenzone is applied topically to the skin as a 20% ointment or a 5% lotion. The latter preparation is intended for patients who have evidenced dermal intolerance to the more concentrated ointment. Experienced dermatologists indicate that the incidence of skin reactions can be further reduced if the 20% ointment is diluted to 10% concentration. Regardless of concentration, all preparations are applied to the areas of hyperpigmentation two or three times daily until the desired degree of depigmentation is obtained. In general, the lower the concentration of monobenzone, the longer will be the period of time required to achieve this result. All therapy should be discontinued if no results are

apparent after 4 months. After successful depigmentation, the application of the drug twice weekly may be sufficient for maintenance therapy.

Phenmetrazine Hydrochloride

Preludin (Geigy); 3-methyl-2-phenylmorpholine HCl.



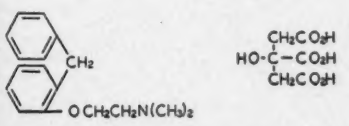
Actions and uses: Phenmetrazine HCl is a secondary amine related in pharmacological action to the amphetamine group of compounds. Like amphetamine, it exerts an appetite-depressant effect; it is therefore useful as an anorexigenic agent in the management of simple obesity caused by excessive caloric intake. The mechanism of its effect upon appetite has not been explained. It should be used only as an adjuvant to a weight-reducing program and not as a substitute for conventional measures.

Phenmetrazine HCl produces a stimulating effect on the central nervous system, but in clinical use the side-effects of nervousness, hyperexcitability, euphoria, and insomnia are much less than with the amphetamine compounds and rarely cause difficulty. There have been no reports of significant toxic reactions to the drug, but, on theoretical grounds, it should not be administered to patients with severe hypertension, thyrotoxicosis, or acute coronary disease. It may be used with caution in patients with moderate hypertension and cardiac decompensation. No cases of addiction to phenmetrazine have been reported, but with all drugs causing central nervous system stimulation, including the amphetamines, this possibility must be borne in mind.

Dosage: Phenmetrazine HCl is administered orally. The usual dose for adults is 25 mg. administered two or three times daily, one hour before meals. Because of variations in eating habits and appetite-peak patterns, it is often advisable to adjust dosage to the requirements of the individual patient. Therapy is continued until the patient reaches the desired weight level, and continued dietary restriction is needed to maintain such a level.

Phenyltoloxamine Citrate

Bristamin dihydrogen citrate (Bristol); N,N-dimethyl-2-(α-phenyl-o-tolyloxy)ethylamine dihydrogen citrate.

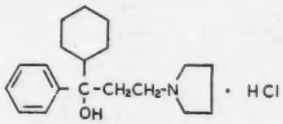


Actions and uses: Phenyltoloxamine citrate is a β-dimethylaminoethyl ether of ortho-benzylphenol; as such, it belongs to the group of antihistaminics exhibiting the aminoalkyl ether structure. In addition to an effective antihistaminic action, this compound exerts antifungal and antibacterial activity in vitro; however, its possible clinical usefulness for the latter purposes has not been determined. The incidence of side-effects is low; at recommended doses, soporific effects occur in less than 7% of patients.

Dosage: The average oral dose for adults is 50 mg. three or four times daily. This may be increased if the desired therapeutic response is not obtained or if side-effects do not become pronounced.

Procyclidine Hydrochloride

Kemadrin (B. W. & Co.); 1-cyclohexyl - 1 - phenyl - 3 - pyrrolidino - 1-propanol HCl.



Actions and uses: Procyclidine HCl, a synthetic aminopropanol, is related in chemical structure and pharmacological action to cycrimine HCl and trihexyphenidyl HCl. Thus, the drug exerts predominantly atropine-like actions on parasympathetic-innervated peripheral structures and a pronounced antispasmodic effect on smooth muscle. It also relieves spasticity in voluntary muscle groups.

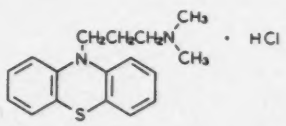
Procyclidine HCl is employed for the symptomatic treatment of paralysis agitans (Parkinson's disease). It is as effective for this purpose as the HCl salts of cycrimine and trihexyphenidyl. Thus, the drug is more useful for reducing muscle rigidity in postencephalitic Parkinsonism than in the arteriosclerotic or idiopathic types of the disease. Effect on tremor is variable; in general, tremor is reduced, although in some severely spastic cases this symptom can become exaggerated as rigidity is relieved. For patients with severe tremor and advanced rigidity, the combination of procyclidine with other antispastic drugs may be advisable.

On the basis of laboratory studies and clinical experience thus far, it would appear that the toxicity of procyclidine HCl is not significant. Side-effects are typical of those produced by parasympatholytic drugs and include dryness of the mouth, mydriasis, lightheadedness, and disorientation. Gastric upsets are also produced occasionally. The frequency, duration, and intensity of these side-effects are chiefly a function of dosage and at clinical levels consist usually only of dryness of the mouth. The drug should be administered cautiously to all patients with glaucoma, tachycardia, and urinary retention.

Dosage: Procyclidine HCl is administered orally. Dosage is variable depending on the age of the patient and the cause of the disease. In general, younger patients and those who have had encephalitis require and tolerate a higher dosage than do older patients and those with arteriosclerotic or idiopathic Parkinsonism. The usual initial dose is 7.5 mg. per day administered in three divided doses after meals. This may then be gradually increased to 15 to 30 mg. per day. Doses as high as 45 to 60 mg. daily have been employed, usually without undue side-effects.

Promazine Hydrochloride

Sparine HCl (Wyeth); 10-(3-dimethylaminopropyl)phenothiazine HCl.

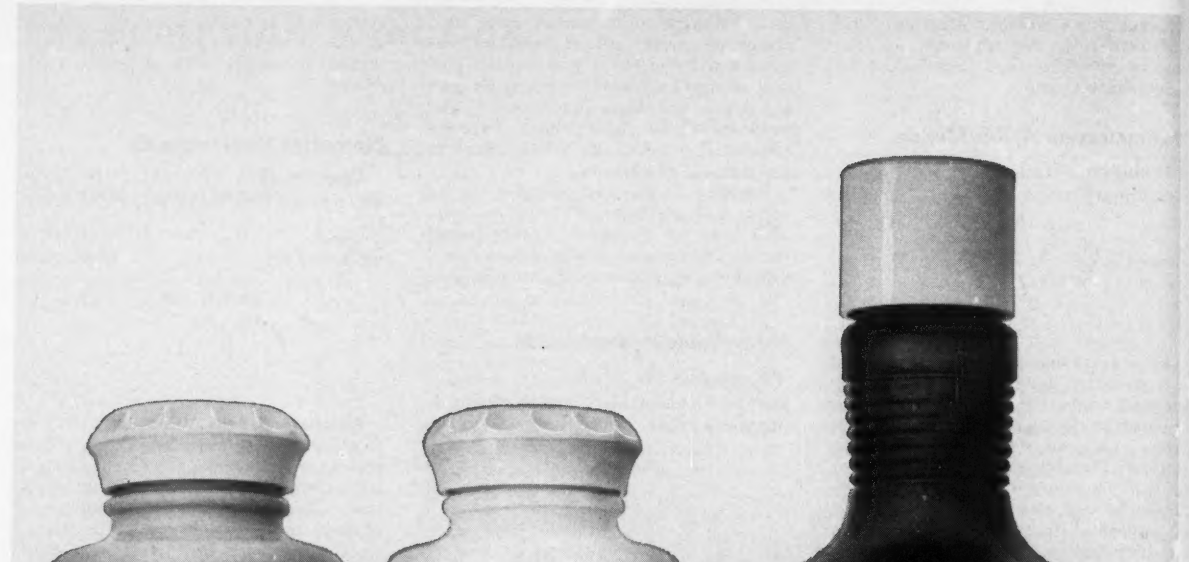


Actions and uses: Promazine HCl is identical in chemical structure to chlorpromazine hydrochloride, except that it lacks the chlorine atom on the ring structure. The general pharmacological properties of these two phenothiazine derivatives are likewise very similar, the chief difference being a lower acute toxicity with promazine after oral and parenteral administration to experimental animals.

Promazine HCl is used in the same manner as chlorpromazine HCl for the treatment of acute neuropsychiatric agitation. It effectively allays the apprehension and anxiety that accompany various types of acute psychoses; it is also reported useful in the management of such alcohol-induced syndromes as delirium tremens, acute hallucinosis, and tremulousness. On the basis of currently available evidence, promazine appears to be essentially equivalent to chlorpromazine as a neuropsychiatric agent. It has not been studied for a sufficiently long period to warrant its routine use in chronic mental disturbances, nor has it been evaluated as an antiemetic agent.

Preliminary reports indicate that some of the more serious toxic manifestations of chlorpromazine have not yet been encountered with promazine. In view of their close structural relationship, however, it is possible that any of the untoward reactions attributed to chlorpromazine could occur after promazine therapy. Jaundice and hypoplastic anemia have not been reported, but transient leukopenia, agranulocytosis, and convulsive seizures have been observed in a few patients. These side-reactions, as well as less serious side-effects such as orthostatic hypotension and undesirable drowsiness, occur with about the same frequency as with chlorpromazine. Thus it is impossible to assess with finality the ultimate toxicity of promazine as compared with chlorpromazine.

Dosage: Promazine HCl is administered orally, intramuscularly, or intravenously. Dosage is highly individualized depending on the severity of symptoms and the degree of response. Whenever possible, the oral route should be employed, since parenteral administration enhances the possibility of orthostatic hypotension. As a general guide, total daily doses ranging from 25 to 300 mg. may be employed. If the response is not satisfactory, doses up to a maximum of 1 Gm. a day may be tried. In all cases, the smallest effective dose should be used.



3 PRODUCTS THAT EARN THEIR SHELF SPACE

3 Lederle vitamin stand-outs...packaged for extra customer appeal

GEVRAL-T*

HIGH POTENCY VITAMIN AND MINERAL SUPPLEMENT LEDERLE

New **"Total Effect"** Nutritional Supplement

Actually **six** nutritional formulas in one, new GEVRAL-T is unequalled for potent, comprehensive support in debilitated patients. Attractive, on-the-table jar encourages regular dosage... repeat sales. Jubilee Jar of 100 capsules.

GEVRAL*

VITAMIN-MINERAL SUPPLEMENT LEDERLE

Favorite Family Vitamin

An established winner at the vitamin counter, this comprehensive 14-vitamin and 11-mineral formula is selling faster than ever in the attractive Jubilee Jar of 100 capsules.

GEVRABON*

VITAMIN-MINERAL SUPPLEMENT LEDERLE

Appealing Nutritional Tonic... Chilled, Plain or "On the Rocks"

A popular change-of-pace in vitamin-mineral support, that doubles as an effective appetite stimulant... strikingly packaged in a new Decanter Bottle of 16 fl. oz.

LEDERLE LABORATORIES DIVISION, AMERICAN CYANAMID COMPANY, PEARL RIVER, NEW YORK

*Reg. U. S. Pat. Off.

PROGRESS in MEDICINE

Acetyldigitoxin in Clinical Practice

A report on 50 patients with heart disease of various etiologies who were digitalized and maintained on acetyldigitoxin (Acylanid) by Dr. M. A. Gold, *Arch. Internal Med.*, **100,** 209(Aug. 1957), indicates that the drug is a well tolerated and effective cardiac glycoside. Acetyldigitoxin, derived from *Digitalis lanata* by removal of a glucose molecule from lanatoside A by enzymatic hydrolysis, is effective orally and digitalization with 0.8 mg. initially followed by 0.4 mg. every six hours was found to fully digitalize 28 out of 29 patients within 24 hours, with only 4 patients developing minor toxic effects. This study corroborates reports that were reviewed in THIS JOURNAL, **18,** 498-(Aug. 1957).

Acute Chlorpromazine Poisoning

An unsuccessful suicide attempt by an 18-year old girl who swallowed 50–100 chlorpromazine (Thorazine) tablets of 100 mg. each, is reported by Dr. A. S. Samuels, *Am. J. Psychiat.*, **113,** 746 (1957). The most prominent sign of chlorpromazine poisoning is central nervous system depression, manifested especially by coma and lack of reflexes. Dr. Samuels notes that chemically related antihistamines produce similar symptoms. No deaths have been reported, even after ingestion of more than 5,000 mg. of chlorpromazine. Treatment is symptomatic, involving intravenous instillation of dextrose solution to maintain fluid balance, administration of a broad spectrum antibiotic to prevent infection, and use of norepinephrine to correct hypotension. Respiratory failure is preferably treated by artificial respiration. Sedatives and stimulants should be avoided.

Antibiotics in Acne

In a clinical evaluation in 211 patients of the oral treatment of acne with newer antibiotics, oleandomycin, novobiocin, and combinations of these with tetracycline and oxytetracycline were effective in dosages of 250 mg. four times a day for four days and then 250 mg. daily for a total of eight weeks. Neomycin in oral dosage of 1 Gm. three times daily for one week was ineffective in an additional group of 15 patients with acne. The report by L. Frank and C. Stritzler, *Antibiotic Med. & Clin. Therapy*, **4,** 419(July 1957), states the belief that the effectiveness of small doses of antibiotics in acne is through their direct suppressive effect on infection in plugged sebaceous follicles. In another report on a series of 94 patients, C. R. Rein and R. Fleischmajer, *ibid.*, **4,** 422(July 1957), found that tetracycline phosphate complex (Tetrex), in capsules equivalent to 250 mg. of tetracycline HCl, given in dosages of one capsule after each meal and before retiring (1 Gm. per day), provided adequate control of the pustular elements of acne vulgaris in 88% of the patients. They note that the frequency of side reactions was low and most of them were of the nonspecific type.

Effect of Lysine on Gastric Secretion

A clinical study of the effect of lysine on the gastric secretion in 21 subjects is reported by Drs. A. M. Sackler and L. H. Sophian, *Science*, **126,** 255(Aug. 9, 1957). They note that the addition of 5 Gm. of lysine HCl to a bread and water test meal significantly increased gastric secretion of hydrochloric acid and pepsin, or both, in 18 of the 21 subjects. It is stated that the results may indicate that part of the effect of lysine given as a nutritional supplement results from the stimulation of gastric secretion, but that this does not preclude or compete with any importance which lysine may have as a participant in anabolic processes.

Ferric Saccharate for Injection

A colloidal ferric saccharate, suitable for the preparation of an injectable solution which is well tolerated by the patient is described by J. Büchi and R. Zoppi-Hug, *Pharm. Acta Helv.*, **31,** 497(1956). It is made as follows: Dissolve 18 Gm. of crystalline sodium carbonate in 250 ml. of cold water; add the solution in small portions to a solution of 10 Gm. of ferric chloride in 100 ml. of cold water, keeping the temperature below 15°. Wash the precipitate free from chloride and draw off the excess water on a vacuum filter. Rub the fresh ferric hydroxide with 14.5 Gm. of sucrose plus 0.5 Gm. of glucose, and add a solution of 0.85 Gm. of sodium hydroxide in 10 ml. of water. Warm the mixture on a water bath until on dilution with 10 parts of water a clear solution is obtained, then evaporate the liquid to dryness on the bath and dry at 105°. The solution for injection is prepared by dissolving the preparation in water and adjusting to a content of 2 Gm. of Fe/100 ml., sterilizing through a filter. This preparation does not contain any ions, provided that the pH is not below 7. Its toxicity is low, the LD50 for mice being 150 mg. Fe/Kg.

Flavonoids in Nutrition and Medicine

A report by W. N. Pearson which indicates little evidence for claims of usefulness of flavonoids as important metabolites, appears in *J. Am. Med. Assoc.*, **164,** 1675(Aug. 10, 1957). The review is published by authority of the AMA Council on Foods and Nutrition and Council on Drugs, and notes that present knowledge indicates that while the flavonoids possess mild pharmacological properties under certain conditions, they have no known nutritional functions and they cannot be regarded as essential nutrients. It states also that "Those workers who claim therapeutic value for the flavonoids have not supported their claims with data obtained from well-controlled clinical studies. Until such studies are made, it must be concluded that the flavonoids are of little or no value in the treatment of disease."

Intramuscular Iron in Iron-Deficiency Anemia

Based on a study of 10 patients with iron-deficiency anemia, who were treated with a preparation containing 50 mg. Fe/cc. and injected (i.m.) 2 cc. twice daily into the gluteal area, Dr. A. B. Hagedorn, *J. Am. Med. Assoc.*, **164,** 1642(Aug. 10, 1957), reports the following conclusions: An effective iron preparation for i.m. injection (Imferon) is now available. To date it has been found to be free from any local or systemic toxic reactions. Patients prefer i.m. to i.v. administration. The hematological response is satisfactory. It appears that the hemoglobin response is a little slower with i.m. than with i.v. given iron when the same dosage schedule is followed. The response possibly may be augmented when the dose is increased. Parenterally given iron is not a substitute for orally given iron as a routine treatment for iron-deficiency anemia. However, parenterally given iron is a valuable addition to the therapy available in certain selected cases. When therapy with parenterally given iron is desirable, it

would seem that i.m. iron is preferable to i.v. iron if for no other reason than that all i.m. preparations are preferable to i.v. ones when the clinical response is comparable because of the innate potential dangers of any i.v. therapy. In addition, there were no reactions of any sort to the i.m. iron preparation used, in contrast to some minor reactions experienced with i.v. iron.

Mecamylamine (Inversine) in Hypertension

Results of clinical trials of mecamylamine, alone and with reserpine, are reported by Drs. J. Moyer, C. Heider, and E. Dennis, *J. Am. Med. Assoc.*, **164,** 1879(Aug. 24, 1957). The effectiveness of combining reserpine with mecamylamine in treating hypertension was noted in 75 patients who had sustained blood pressure levels above 150/100 mm. Hg before treatment. A comparison was made between one group of 17 patients receiving mecamylamine alone and another group of 58 receiving mecamylamine with reserpine. The reserpine was given in amounts of 1 mg. daily by mouth in four equally divided doses. The optimal oral dosage of mecamylamine was determined by a set dose titration procedure for each patient, beginning with 2.5 mg. twice a day; the average dose of mecamylamine for those patients who did respond to the drug alone during prolonged treatment was 34 mg. daily. There were some patients who did not respond satisfactorily to double this dose. The patient was described as responding to the treatment if it brought about a fall of 20 mm. Hg or more in his mean blood pressure or a reduction to the normotensive level, taken as below 150/100 mm. Hg. The over-all response rate for the group receiving mecamylamine alone was 57%; the corresponding figure for the group receiving the combination of drugs was 92%. The combination was therefore more effective than the mecamylamine alone. The most frequent side-effects of prolonged administration of mecamylamine were xerostomia, general weakness, and constipation; the most frequent complaints when the combination was taken for many months were impotence, excessive sedation, and blurring of vision.

Meprobamate and Lobeline as Smoking Deterrents

In a study of the smoking habits of 33 medical students, W. A. Bartlett and R. W. Whitehead, *J. Lab. & Clin. Med.*, **50,** 278(Aug. 1957), observed no effect upon oral administration of meprobamate (400-mg. capsule 3 times daily) or a buffered lobeline preparation (1 capsule, containing the equivalent of 1 Bantron tablet, 3 times daily). In a study involving 15 students who stated they wished to stop smoking, no objective or subjective difference was noted between the group receiving meprobamate and those receiving a placebo. However, 6 out of 7 subjects felt that the placebo had helped them to resist the desire to smoke.

Oral Chlortetracycline

Tests on 20 human subjects who were given single 250-mg. doses of four capsule preparations: chlortetracycline HCl, chlortetracycline base, and each form of the drug mixed with 380 mg. of sodium hexametaphosphate ($NaPO_3$) per capsule, are reported by H. Welch, *et al., Antibiotic Med. & Clin. Therapy,* **4,** 414(July 1957). Markedly higher blood serum concentrations of the HCl salt and the base when mixed with $NaPO_3$ were noted in blood collected 2, 3, and 6 hours after administration. Although chlortetracycline HCl alone produced somewhat lower serum concentrations than did the chlortetracycline base, the addition of sodium hexametaphosphate to chlortetracycline hydroch'oride enhanced blood concentrations to such an extent that they approached those obtained with chlortetracycline base mixed with sodium hexametaphosphate.

Penicillin Sensitivity Test

Deaths due to penicillin sensitivity are caused by immediate anaphylactic reactions rather than by the delayed urticarial or serum-sickness type of reactions. Pretherapy identification of persons likely to have anaphylactic reactions would permit withholding of penicillin to prevent fatal reactions. A simplified procedure of testing for penicillin anaphylactic sensitivity is described by Dr. V. M. Smith, *New Engl. J. Med.*, **257,** 447(Sept. 5, 1957). The test consists of the application of drops of full-strength (300,000 units per ml.) procaine penicillin solution to a skin scratch and into a conjunctival sac. The test areas are observed after fifteen minutes for itching, redness, edema, and wheal formation. The only material required is that needed to administer the therapeutic dose of penicillin. Evaluation of this simple procedure as a routine pretherapy sensitivity test was the object of a clinical study during which 1,365 subjects were tested. The method was found to be highly accurate in identifying persons susceptible to penicillin anaphylactic reactions. Patients who demonstrate an area of skin erythema greater than 1 cm. in diameter, itching and wheal formation on the skin or itching, redness or edema of the eye should not be given penicillin in any form until further testing conclusively proves that they are sensitive to the vehicle and not to the penicillin. Approximately 1% of patients will be denied penicillin therapy under this program.

Solubilized Colorado Shale Oil in Dermatology

The use of solubilized Colorado shale oil (Metashall) in the form of water-miscible preparations (8.7% cream, 18% lotion, with respect to crude shale oil content) in patients with various skin diseases is reported by Drs. R. Brandt and W. Szolomejer, *Arch. Dermatol.*, **76,** 241(Aug. 1957). The physicians note favorable results in atopic dermatitis of all ages and stages, particularly in cases of lichenification. Also other lichenified groups, as circumscribed neurodermatitis or chronic occupational dermatitis, respond often after other applications have failed. On the other hand, the oil is surprisingly well tolerated in rather acute infantile eczema. The choice between lotion and ointment follows general dermatological principles, but in addition the ointment works well within a wide range of acuity and chronicity. It is stated that "All tars have a variety of action of which the antipruritic and antibacterial ones are most easily defined. As to Colorado shale oil, the latter effect can be demonstrated in the inhibition test on agar plates (against *Staphylococcus aureus*). These effects, however, are only additive and can be achieved by other medication Only the 'antieczematous' effect, although not easy to define, is peculiar to the tars, and among them Colorado shale oil seems to occupy an important place."

Topical Prednisone and Prednisolone in Dermatoses

A series of patients with various skin diseases generally responsive to topical hydrocortisone therapy were treated with different lots of prednisone and prednisolone, with 1% hydrocortisone as a positive control and the blank vehicle as a negative control. Observations by G. R. Frolow, V. H. Witten, and M. B. Sulzberger, *Arch. Dermatol.*, **76,** 185-(Aug. 1957), indicated no apparent difference in therapeutic effectiveness of the first batches of prednisone and prednisolone ointments, and neither was more effective than 1% hydrocortisone ointment. Later batches of prednisone and prednisolone in 0.5% concentration were as effective as 1% hydrocortisone.

NOW, FROM ROBINS, A NEW AND UNEXCELLED ANTIHISTAMINE

Dimetane

it's easy to remember Di me tane

PARABROMDYLAMINE MALEATE

why Dimetane can bring new life to your antihistamine Rx volume » *it's a new and unexcelled antihistamine:* Milligram for milligram, DIMETANE potency is unexcelled. DIMETANE has a therapeutic index unrivaled by any other antihistamine—a relative safety unexceeded by any other antihistamine. DIMETANE, even in very low dosage, has been effective when other antihistamines have failed. Drowsiness, other side effects have been at the very minimum. » *it's now being intensively advertised and detailed to develop its fullest profit potential for you fast!*

Packaging: **Dimetane Extentabs®** to protect the allergic patient for 10-12 hours on just one tablet: 12 mg. each, bottles of 100 and 500.

Dimetane Tablets to provide supplementary antihistamine protection during periods of extra stress, or for standard t.i.d. therapy: 4 mg. each, bottles of 100 and 500.

Dimetane Elixir to provide potent, well tolerated antihistamine therapy for the very young and those patients better maintained on this really good-tasting elixir: 2 mg. per teaspoonful (5 cc.), bottles of 1 pint.

Robins

A. H. ROBINS CO., INC.

Richmond, Virginia • Ethical Pharmaceuticals of Merit Since 1878

NEW PRESCRIPTION PRODUCTS

All actively promoted items on which information has been received in the past thirty days are reported here. Manufacturers are urged to send details of their new products as early as possible, so that pharmacists through these pages will have full information before products are detailed to the physician. For inclusion in this department, for which there is no charge, send descriptive literature to the Editor, New Prescription Products Department, JOURNAL OF THE AMERICAN PHARMACEUTICAL ASSOCIATION, 2215 Constitution Avenue, N.W., Washington 7, D. C.

Adrestat Capsules
Adrestat Lozenges
Adrestat (F) Ampuls

Description: Each capsule and lozenge contains: adrenochrome semicarbazone, 2.5 mg. (present as 65 mg. carbazochrome salicylate); sodium menadiol diphosphate, 5 mg.; hesperidin, 50 mg.; and vitamin C, 100 mg. Each 1-cc. ampul contains adrenochrome semicarbazone, 5 mg. (as 130 mg. carbazochrome salicylate).

Indications: For prevention and control of bleeding.

Administration: Capsules and lozenges, 3 times daily in prescribed dosage, for 5 days preceding and 5 days following surgery. Prior to surgery 1 cc. of Adrestat (F), the injectable form, is given and may be continued every 2 hours until bleeding is controlled.

Form Supplied: Capsules, boxes of 30; lozenges, boxes of 20; 1-cc. ampuls in boxes of 5.

Source: Organon Inc., Orange, N.J.

Cholarace Tablets

Description: Each tablet contains: choline theophyllinate, 200 mg.; racephedrine HCl, 20 mg.; pentobarbital, 27.5 mg.

Indications: For symptomatic relief of bronchospasm in asthma, hay fever, emphysema, bronchitis, bronchiectasis, and pulmonary infections.

Administration: 1 tablet every 3 to 4 hours; children 10–15 years of age, 1 tablet every 4 hours.

Form Supplied: Bottles of 100 and 500.

Source: Nepera Laboratories, Morris Plains, N.J.

Enovid Tablets

Description: Each coral - colored, uncoated, scored 10-mg. tablet contains 17 - alpha - ethynyl-17 - hydroxy - 5(10)-estren-3-one with 0.15 mg. ethylnylestradiol 3-methyl.

Indications: Principally stimulates the endometrium to a luteal phase and is indicated in the following menstrual disorders: primary and secondary amenorrhea, menorrhagia, metrorrhagia, oligomenorrhea, inadequate luteal phase, dysmenorrhea and premenstrual tension. Enovid-treated cycles may be anovulatory if treatment is begun before the 15th day of the cycle, and the first post-therapy cycle may be prolonged for a few days.

Administration: Differs for some of the various indications but essentially treatment is given for three consecutive cycles: 1 tablet (10 mg.) from day 5 to day 25 of the cycle, except in amenorrhea when Enovid is given for 20 days to establish the first cycle, in metrorrhagia for ten days to establish the cycle and if ovulation is desired therapy should be begun on day 15 instead of day 5 of the cycle. If nausea should occur the daily dosage may be decreased to half or given in divided doses for three days and then back to full dosage. Intermenstrual spotting, evidence of inadequate dosage, may be controlled by increasing the daily dosage by 10 mg.

Form Supplied: Bottles of 50 tablets.

Source: G. D. Searle & Co., Chicago, Ill.

Semi-Lente Iletin
Ultra-Lente Iletin

Description: Suspensions of zinc-insulin differing only in particle size which determines duration of action. Semi-Lente Iletin has smaller particles and shorter action (12–16 hrs.); Ultra-Lente Iletin has total duration of action in excess of 36 hrs.

Indications: Both forms are used to modify the duration of action of Lente Iletin by admixture with Semi-Lente to shorten or with Ultra-Lente to lengthen.

Administration: As determined by the physician. The 3 Lente products are miscible with one another, but they must not be mixed with other modified insulin preparations. They are not adapted for use in place of unmodified insulin in dealing with acidosis and emergencies when immediate action is essential.

Form Supplied: Semi- and Ultra- forms, 40 units and 80 units per cc. in 10-cc. vials (10 in a carton). Refrigerate but do not freeze.

Source: Eli Lilly and Co., Indianapolis, Ind.

Theruhistin Syrup
Theruhistin Tablets

Description: Each 5 cc. of syrup contains 2 mg., and each tablet contains 4 mg. of isothipendyl HCl.

Indications: For symptomatic relief of allergic conditions.

Administration: As directed.

Form Supplied: Syrup in pint bottles tablets in bottles of 100 and 1,000.

Source: Ayerst Laboratories, New York 16, N.Y.

Tron-Oto Otic Solution

Description: Each cc. contains: Tronothane (pramoxine), 10 mg.; erythromycin (as sulfate), 5 mg.; polymyxin B (as sulfate), 10,000 u., in an anhydrous solvent.

Indications: Symptomatic treatment for "simple earache," for relief of painful conditions of the external ear, in otitis media with purulent discharge and otitis externa with purulent discharge and otitis externa with secondary infection.

Administration: 3 or 4 drops applied into the external ear 3 or 4 times daily.

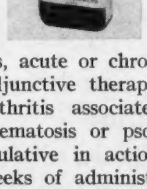
Form Supplied: 5-cc. bottle with dropper.

Source: Abbott Laboratories, North Chicago, Ill.

Other New Products

(Including chemicals, clinical trial drugs, diagnostic aids, and equipment for the retail and hospital pharmacy.)

Aralen Phosphate Tablets



Tablets containing, in each, 125 mg. or 250 mg. of Aralen (chloroquine) phosphate are marketed by *Winthrop Laboratories* for use in rheumatoid arthritis, acute or chronic, with or without adjunctive therapy; spondylitis; and arthritis associated with lupus erythematosis or psoriasis. Dosage, cumulative in action, requiring 4 to 12 weeks of administration before therapeutic effects appear. Adults: 250-mg. tablet once daily. If side effects appear withdraw for several days and reinstate treatment with 125 mg. daily. If well tolerated increase to 250 mg. daily. This is a new use for chloroquine phosphate USP which has been effective as an antimalarial and antiprotozoan agent. Supplied, 250-mg. tablets, in bottles of 100 and 1,000; 125-mg. tablets in bottles of 100. See p. 521.

Compazine Tablets 25 mg.

Smith, Kline & French now markets its tranquilizing drug Compazine (prochlorperazine) in 25-mg. tablets to facilitate high-dosage regimens in psychiatric patients with several mental and emotional disturbances. Supplied in bottles of 50 and 500 tablets. Available also in 5-mg. and 10-mg. tablets, 10-mg. and 15-mg. Spansule capsules, and 10-mg., 2-cc. ampuls. See p. 257.

Diagnex Blue Acid Test

Diagnex Blue, a blue dye-resin complex, is marketed by *E. R. Squibb & Sons* in a packet including 2 Gm. dye-resin containing approximately 100 mg. azure A dye, and two 250-mg. tablets of caffeine sodium benzoate. For the test the fasting patient takes the 2 tablets, and after 1 hour he takes 1/4 glass of water containing the granules of blue dye-resin complex. If free hydrochloric acid is present in the stomach, some of the dye is displaced from the complex by hydrogen ions and appears in a urine sample obtained exactly two hours later. The dye content is estimated by visual comparison with color standards using the comparator that comes with each package of 5 or 50 test units.

Filibon Capsules

A prenatal dietary supplement containing vitamins A, D, B_1, B_6, B_2, B_{12}, C, K, niacinamide, folic acid, ferrous fumerate, noninhibitory intrinsic factor, and minerals F, Cu, I, K, Mn, Mg, Mo, Zn, and $CaCO_3$, in one-a-day pink capsules, are marketed by *Lederle Laboratories* in jars of 100. See p. 523.

Furadantin Oral Suspension

Eaton Laboratories now markets its oral suspension of Furadantin (nitrofurantoin) in 60-cc. bottles. The 4-oz. size will be discontinued.

Gevral T Capsules

A high potency combination of 14 vitamins (with more than the MDR of A, B_1, B_2, C, D and niacinamide) and 11 minerals, is marketed by *Lederle Laboratories* for use when supplemental requirements are very high. Dosage is 1 capsule daily. Supplied in special jars of 100. See p. 624.

Hepzide Powder (Vet.)

Merck & Co. have marketed Hepzide (nithiazide) [1 - ethyl - 3(5 - nitro - 2-thiazolyl) urea] for use in the treatment of blackhead disease of turkeys and chickens and hexamitiasis in turkeys. Death losses are reduced in these diseases 4–6 days after the first day of treatment. Hepzide is supplied in 1/2-lb. bottles and 5-lb. drums.

Matromycin for Injection, I.V.

Vials containing, in each, 500 mg. Matromycin (oleandomycin) powder, to be dissolved in diluent before i.v. injection, are marketed by *Pfizer Laboratories* in single cartons. See p. 205.

Neo-Synephrine Compound Cold Tablets

Tablets containing, in each, Neo-Synephrine (phenylephrine) HCl, 5 mg.; Acetaminophen (N - acetyl-*p* - aminophenol), 150 mg.; thenyldiamine HCl, 7.5 mg.; and caffeine, 15 mg., are marketed by *Winthrop Laboratories* for treatment of the common cold and in the management of allergic rhinitis including hay fever and vascomotor rhinitis, chronic sinusitis, and influenza. Dosage, 2 tablets 3 times daily; children 6 to 12 years, 1 tablet 3 times daily. Supplied in bottles of 100. See p. 589.

Panmycin Phosphate Capsules 125 mg.

Capsules containing, in each, tetracycline phosphate complex equivalent to 125 mg. tetracycline HCl are marketed by *The Upjohn Co.* in bottles of 25 and 100. The 250-mg. capsules also are available.

Pentrazine Tablets

Pink, scored tablets containing, in each, pentaerythritol tetranitrate, 10 mg.; Butisol (butabarbital) sodium, 10 mg.; and reserpine, 0.05 mg., are marketed by *McNeil Laboratories, Inc.* for use in the prophylactic management of angina pectoris by reducing severity and frequency of attacks. Dosage, 1 tablet 4 times daily, before meals and at bedtime. Supplied in bottles of 100 and 1,000.

Pentryate Timed Capsules

Capsules containing, in each, 30 mg. pentaerythritol tetranitrate are marketed by *Testagar & Co.* for use in cases of angina pectoris. Dosage, 1 or 2 capsules morning and evening, with each dose stated to provide 10–12 hours coronary vasodilation. Use with caution in patients with glaucoma. Supplied in bottles of 100 and 1,000 capsules.

Phosphatabs Test Kit

Warner - Chilcott Laboratories have marketed an alkaline phosphatase test kit which includes: 48 Phosphatab tablets, a bottle of color developer, 48 Teswells (test tubes), a set of 8 Teswells, a folder with directions for the test and a color comparison chart with which various disease conditions can be identified. A few drops of serum are used in the test for alkaline phosphatase in the diagnosis of cancer, jaundice, and other diseases of the liver and skeleton. The test can be completed in 12 to 31 minutes. Phosphatabs will be marketed through laboratory supply distributors.

Prednis Tablets

Scored tablets containing, in each, 5 mg. prednisolone are marketed by *U.S. Vitamin Corp.* for use as an anti-inflammatory, antiallergic, antiarthritic, and antirheumatic agent. Dosage, initially 2 to 6 tablets daily in divided doses; reduce after one week, or as soon as favorable response is noted, by 1 or 2 tablets every 4 or 5 days until symptoms recur, then establish maintenance dose as low as possible. Supplied in bottles of 100 and 1,000.

Premarin with Meprobamate Tablets

Tablets containing, in each, conjugated estrogens equine (Premarin), 0.4 mg., and meprobamate, 400 mg., are marketed by *Ayerst Laboratories* for estrogenic plus tranquilizing effects in the control of the menopausal syndrome when symptoms are caused by estrogen deficiency and unusual emotional stress is present. Dosage, orally, 1 tablet 3 times daily in 21-day courses with a rest period of 1 week. Supplied in bottles of 60 and 500.

Quinoplex Tablets

Tablets containing, in each, quinanthrols from senna pods, equivalent to 10 mg. sennosides A and B, are marketed by *Gray Pharmaceutical Co.* for use in the treatment of chronic constipation. Dosage, 1 or 2 tablets at bedtime. Supplied in bottles of 30 tablets.

Rheastat Suspension

A suspension containing, in each fluid ounce: phenobarbital, 16.2 mg.; hyoscyamine sulfate, 0.1286 mg.; atropine sulfate, 0.025 mg.; hyoscine HBr, 0.0074 mg.; kaolin, 6 Gm.; pectin 320 mg.; sodium (as chloride), 6 mEq.; potassium (as chloride), 4

mEq.; in an aluminum hydroxide gel, is marketed by *Vanpelt & Brown, Inc.* for control of diarrhea and relief of inflammations and acute upsets of the gastrointestinal tract. Dosage, initially for diarrhea, 2 tablespoonfuls, followed by 1 or 2 tablespoonfuls after each stool; for other conditions, 1 tablespoonful every 3 or 4 hours. Children 3 to 6 years, 1/4 the adult dose; over 6 years, 1/3 to 1/2 the adult dose. Supplied in pint bottles.

Romilar CF Syrup

A flavored (Cold Formula) syrup containing, in each 5-cc. teaspoonful: Romilar HBr (*d*-methorphan HBr), 15 mg.; chlorpheniramine maleate, 1.25 mg.; phenylephrine HCl, 5 mg.; and N-acetyl-*p*-aminophenol, 120 mg., is marketed by *Hoffmann-La Roche Inc.*, for symptomatic relief of colds and acute upper respiratory disorders. Dosage, adults and children over 8 years, 1 to 2 teaspoonfuls every 4 hours; younger children, 1/4 to 1 teaspoonful every 4 hours, according to age. Prescription required. In 16-oz. and 1-gal. bottles. See Oct., inside back cover.

Saff Liquid

A flavored liquid containing pressed safflower seed oil which contributes an unsaturated fatty acid (linoleic acid) content of 46%, along with less than 5% saturated fatty acid and less than 13% oleic acid, which is considered to be a nonessential unsaturated fatty acid, is marketed by *Abbott Laboratories* for use as a dietary aid in the prevention of atherosclerosis by decreasing blood cholesterol. Saff is miscible with common beverages and a number of foods. Use and dosage depends upon physician's diagnosis. Available in pint bottles (6-day supply).

Solu-Plastin Dropak

Schieffelin & Co. has marketed its thromboplastin solution, used in plasma prothrombin tests, in a package containing a 10-cc. bottle of the solution and a 10-cc. bottle of 0.0125 *M* calcium chloride and a nichrome wire. The bottles have droppers which deliver drops of controlled size.

Somnalert Capsules

Warren-Teed Products Co. has marketed capsules of hexobarbital, 5(1-cyclohexenyl)-1,5-dimethylbarbituric acid, in bottles of 100 and 500.

Senokap Capsules

Capsules containing, in each, extract of *Cassia acutifolia* (senna) pods, 225 mg., dioctyl sodium sulfosuccinate, 50 mg., are marketed by *Purdue Frederick Co.* for use in the treatment and correction of constipation. Dosage, orally, 1 or 2 capsules before bedtime. Supplied in bottles of 30 and 60 capsules.

Streakacin Suspension (Vet.)

A suspension containing streptomycin, kaolin, bismuth, and pectin is marketed by *E. R. Squibb* for oral use in the treatment of calf scours, swine dysentery, enteritis in young pigs, gastrointestinal catarrh in cows, and diarrhea in dogs. Supplied in pint bottles.

Strip Packaging

Plastic strips of heat-sealed, single-unit packages of tablets, powders, and liquids are prepared with submitted formulations by *Unipack Corp.*

Sumycin Pediatric Drops
Sumycin Suspension

Cherry-flavored pediatric drops containing tetracycline phosphate complex equivalent to 100 mg. tetracycline HCl in each cc., and a cherry-flavored suspension containing the complex equivalent to 125 mg. tetracycline HCl in each 5 cc., are marketed by *E. R. Squibb & Sons.* The drops are supplied in 10-cc. bottle with dropper that delivers about 5 mg. per drop (20 drops per cc.); suspension in 2-oz. bottles. Sumycin capsules 250 mg. also are available. See p. 562.

Tetrex Pediatric Drops

A syrup containing, in each cc., phosphate-buffered tetracycline equivalent to 100 mg. tetracycline HCl is marketed by *Bristol Laboratories* for pediatric use. Supplied in 10-cc. bottles with dropper calibrated at 25 mg. and 50 mg. It is stable at room temperature.

Trisogel Suspension

A mint-flavored suspension containing, in each 5 cc., magnesium trisilicate 9 gr., and aluminum hydroxide 2.3 gr. (equivalent to dried aluminum hydroxide gel 3 gr.), is marketed by *Eli Lilly and Co.* for use in the treatment of gastric acidity and in total therapy for peptic ulcer. Dosage, in peptic ulcer, 1–2 tablespoonfuls every 1–3 hours; for gastric hyperacidity in the absence of peptic ulcer, 2 or more teaspoonfuls as needed. Supplied in 12-oz. bottles. The combination is available also in Pulvule form.

Communicable Diseases Summary

THE number of cases of the communicable diseases shown in the table below are based on reports by Health Officers of each State and of Alaska, Hawaii, and Puerto Rico to the National Office of Vital Statistics of the Department of Health, Education, and Welfare, Washington, D.C. The number of cases of each disease occurring during each of the last 5 weeks are reported and also cumulative totals to date for 1957 and for the corresponding period of 1956. The approximate seasonal low point for each of the diseases is shown in the last column. The 1952–1956 medians will appear next month.

Communicable Disease	Cases Reported for Week Ending					Cumulative Number		Low Point (Approximate Seasonal)
Selected Notifiable Disease	*Aug. 17, 1957*[a]	*Aug. 24, 1957*[c]	*Aug. 31, 1957*[h]	*Sept. 7, 1957*	*Sept. 14, 1957*	*First 37 Weeks 1957*	*1956*	
Anthrax	—	—	—	—	1[f]	15	32	[g]
Botulism	2[b]	—	2[d]	—	—	11	5	[g]
Brucellosis (undulant fever)	16	17	13	24	11	702	759	[g]
Diphtheria	18	23	10	17	43	667	989	July 1
Encephalitis, infectious	81	53	55	54	50	1,293	1,332	June 1
Hepatitis, infectious, and serum	279	200	185	226	248	11,494	14,612	Sept. 1
Malaria	6	11	2	5	4	112	169	[g]
Measles	1,410	1,272	879	824	1,007	451,504	578,339	Sept. 1
Meningococcal infections	43	32	21	34	35	1,754	2,029	Sept. 1
Meningitis, other	56	134	53	70	62	1,700	1,105	— — —
Poliomyelitis	319	396	257	244	282	4,410	10,729	Apr. 1
Paralytic	81	94	70	73	90	1,389	4,720	Apr. 1
Nonparalytic	190	233	132	124	148	2,308	4,138	Apr. 1
Unspecified	48	69	55	47	44	713	1,871	Apr. 1
Psittacosis	4	4	2	2	1	194	392	[g]
Rabies in man	—	—	—	1[e]	—	4	6	[g]
Typhoid fever	56	42	27	24	29	939	1,339	Apr. 1
Typhus fever, endemic	1	1	6	1	7	91	79	Apr. 1

[a] Data exclude report from Nev. for the current week. [b] Reports show 1 case in Md. and 1 case in N.J. [c] Data exclude reports from Vt. and Idaho for the current week. [d] Reported in Calif. [e] Reported in S.C. [f] Reported in N.H. [g] Data show no pronounced seasonal change in incidence. [h] Data exclude reports from N.H., S.D., and Tex. for current week. Symbols: 1 dash (—) no cases reported; 3 dashes (— — —) data not available.

CUMULATIVE INDEXES*

NEW PRESCRIPTION PRODUCTS

Listed by Product Name

Acetulan, American Chol. Prod., 443
Achromycin Ophth. Oil Susp., Lederle, 564
Achromycin V Caps., Lederle, 443, 564
Adrestat Caps., Lozenges, Organon, 628
Adrestat (F) Ampules, Organon, 628
Alba-Penicillin Caps. (Vet.), Upjohn, 443
Albumisol Serum Albumin, Merck S & D, 499
Albustix Reagent Strips, Ames, 501
Amodex Q Caps., Testagar, 501
Aralen Phosphate Tabs., Winthrop, 628
Arcofac Emulsion, Armour, 564
Azotrex Caps., Bristol, 499
B_{12} Concentrate Inj., West-ward, 566
Bacteriostat CS-1, Catalin Corp., 444
Bidrolar Tabs., Armour, 444
Cathomycin Calcium Syrup, Merck S&D, 444
Cholarace Tabs., Nepera, 628
Clinistix Color Card, Ames, 566
Compazine Spansule Caps., SK&F, 501
Compazine Tabs., SK&F, 444
Compazine Tabs. 25 mg., SK&F, 629
Comycin Caps., Upjohn, 443
Decavitamin Caps., U.S.P., West-ward, 501
Diagnex Blue Acid Test, Squibb, 629
Donnagel with Neomycin, Robins, 566
Dorbantyl Forte Caps., Schenley, 501
Dornavac for Inhalation, Merck S&D, 443
DuoStrep, VetStrep. and S.Q. (Vet.), Merck, 501
E. F. A. Emulsion, Columbus, 501
Eight Vitamin Drops, Phila. Amp., 566
Enovid Tabs., Searle, 628
Estradurin for Inj., Ayerst, 443
Estrosed Tabs., Chicago Pharm., 566
Fergon c C Caplets, Winthrop, 444
Filibon Caps., Lederle, 629
Flavinol-C Caps., Walker, 566
Floropryl Ophth. Oint., Merck S&D, 499
Fungacetin Oint., Harvey, 444
Furacin Soluble Dressing, Eaton, 501
Furacin Water Mix (Vet.), Eaton, 566
Furadantin, I. V., Eaton, 501
Furadantin Oral Susp., Eaton, 629
Gelfilm, Ophthalmic, Sterile, Upjohn, 501
Gevral T Caps., Lederle, 629
Heaf Gun for Tuberculin Test, Panray, 501
Hepzide Powder (Vet.), Merck, 629
Hydeltrasol Ophth. Oint., Merck S&D, 566
Hydeltrasol Ophth. Soln., Merck S&D, 566
Hydeltrasol Topical Lotion, Merck S&D, 566
Ilopan Ampuls, Warren-Teed, 566
Ivotox Lotion, Bruce, 444
Linodoxine Emulsion, Pfizer, 566
Marsilid Tabs., H-LaRoche, 443
Matromycin for Inj., I. V., Pfizer, 629
Meprolone-5 Tabs., Merck S&D, 566
Milpath Tabs., Wallace, 499
Milprem Tabs., Wallace, 564
Mycostatin Oint. (Vet.), Squibb, 566
Neo-Hydeltrasol Ophth. Oint., Merck S&D, 566
Neo-Hydeltrasol Ophth. Soln., Merck S&D, 444
Neo-Hydeltrasol Topical Lotion, Merck S&D, 566
Neoparbel Tabs., Central, 501
Neo-Synephrine Compound Cold Tabs., Winthrop, 629
Neo-T-Cain Lozenges, Chicago Pharm., 444
Orabiotic Troches, White Labs., 444
Orinase Tabs., Upjohn, 499
Panmycin Phosphate Caps. 125 mg., Upjohn, 629
Paracortol Tabs., P-D, 564
Parlite Soluble Vitamins, Lederle, 499
Pathibamate Tabs., Lederle, 443
Peganone Tabs., Abbott, 499
Pentrazine Tabs., McNeil, 629
Pentryate Tabs., Testagar, 444; —with **Phenobarbital Tabs.,** 444; —**Timed Caps.,** 629
Pen-Vee Sulfas for Susp., Wyeth, 443
Phosphatabs Test Kit, Warner-Chilcott, 629
Prednis Tabs., U.S. Vitamin, 629
Premarin with Meprobamate Tabs., Ayerst, 629
Purinethol Tabs., B. W. &. Co., 564
Pyrogel Emulsion, Bruce, 444
Quinoplex Tabs., Gray, 629
Radioisotopes, Nucleonic Corp., 444
Rheastat Susp., Vanpelt & Brown, 629
Romilar CF Syrup, H-LaRoche, 630
Saff Liquid, Abbott, 630
Saffola Oil, Saffola Labs., 444
Sandostene Spacetab Tabs., Sandoz, 566
Semi-Lente Iletin, Lilly, 628
Senokap Caps., Purdue Frederick, 630
Sigmamycin for Injection, I. V., Pfizer, 499
Signemycin V Caps., Pfizer, 564
Sintrom Tabs., Geigy, 564
Solu-Plastin Dropak, Schieffelin, 630
Somnalert Caps., Warren-Teed, 630
Sparine HCl Tabs., Wyeth, 444
Stetric Tabs., Smith-Dorsey, 444
Streakacin Susp. (Vet.), Squibb, 630
Strip Packaging, Unipack, 630
Sumycin Pediatric Drops, Squibb, 630
Sumycin Suspension, Squibb, 630
Tetrabon V Syrup, Pfizer, 564
Tetrex Pediatric Drops, Bristol, 630
Theruhistin Syrup, Ayerst, 628
Theruhistin Tabs., Ayerst, 628
Trionine Tabs., H-LaRoche, 443
Trisogel Suspension, Lilly, 630
Tron-Oto Otic Soln., Abbott, 628
Ultra-Lente Iletin, Lilly, 628
Ziramel Creme, Bruce, 501
Zymabasic Drops, Upjohn, 501

Listed by Manufacturer

Abbott Laboratories
Clinistix Color Card, 566
Peganone Tabs., 499
Saff Liquid, 630
Tron-Oto Otic Soln., 628
American Cholesterol Products
Acetulan, 443
Ames Company
Albustix Reagent Strips, 501
Armour Laboratories
Arcofac Emulsion, 564
Bidrolar Tabs., 444
Ayerst Laboratories
Estradurin for Inj., 443
Premarin with Meprobamate Tabs., 629
Theruhistin Syrup, 628; Tabs., 628
Bristol Laboratories, Inc.
Azotrex Caps., 499
Tetrex Pediatric Drops, 630
Bruce Parenterals
Ivotox Lotion, 444
Pyrogel Emulsion, 444
Ziramel Creme, 501
Burroughs Wellcome & Co.
Purinethol Tabs., 564
Catalin Corp. of America
Bacteriostat CS-1, 444
Central Pharmacal Co.
Neoparbel Tabs., 501
Chicago Pharmacal Company
Estrosed Tabs., 566
Neo-T-Cain Lozenges, 444
Columbus Pharmacal Co.
E. F. A. Emulsion, 501
Eaton Laboratories
Furacin Soluble Dressing, 501
Furacin Water Mix (Vet.), 566
Furadantin I. V. Solution, 501
Furadantin Oral Susp., 629
Geigy Pharmaceuticals
Sintrom Tabs., 564
Gray Pharmaceutical Co.
Quinoplex Tabs., 629
G. F. Harvey Company
Fungacetin Oint., 444
Hoffmann-LaRoche, Inc.
Romilar CF Syrup, 630
Marsilid Tabs., 443
Trionine Tabs., 443
Lederle Laboratories
Achromycin V Caps., 443
Achromycin Ophth. Oil Susp., 564
Achrostatin V Caps. 250 mg., 564
Filibon Caps., 629
Gevral T Caps , 629
Parlite Soluble Vitamins, 499
Pathibamate Tabs., 443
Eli Lilly and Co.
Semi-Lente Iletin, 628
Trisogel Susp., 630
Ultra-Lente Iletin, 628
McNeil Laboratories
Pentrazine Tabs., 629
Merck & Co., Inc.
DuoStrep, VetStrep, and S.Q. (Vet), 501
Hepzide Powder (Vet.), 629
Merck Sharp & Dohme
Albumisol Serum Albumin, 499
Cathomycin Calcium Syrup, 444
Dornavac for Inhalation, 443
Floropryl Ophth. Oint., 499
Hydeltrasol Ophth. Oint., 566
Hydeltrasol Ophth. Soln., 566
Hydeltrasol Topical Lotion, 566
Meprolone-5 Tabs., 566
Neo-Hydeltrasol Ophth. Oint., 566
Neo-Hydeltrasol Ophth. Soln., 444
Neo-Hydeltrasol Topical Lotion, 566
Nepera Laboratories
Cholarace Tabs., 628
Nucleonic Corp. of America
Radioisotopes, 444
Organon Inc.
Adrestat Caps., Lozenges, 628
Adrestat (F) Ampuls, 628
Panray Corp.
Heaf Gun for Tuberculin Test, 501
Parke, Davis & Co.
Paracortol Tabs., 564
Pfizer Laboratories
Linodoxine Emulsion, 566
Matromycin for Inj., I. V., 629
Sigmamycin for Inj., I.V., 499
Signemycin V Caps., 564
Tetrabon V Syrup, 564
Philadelphia Ampoule Labs.
Eight Vitamin Drops, 566
Purdue Frederick Co.
Senokap Caps., 630
A. H. Robins Co.
Donnagel with Neomycin, 566
Saffola Laboratories
Saffola Oil, 444
Sandoz Pharmaceuticals
Sandostene Spacetab Tabs., 566
Schenley Laboratories
Dorbantyl Forte Caps., 501
Schieffelin & Co.
Solu-Plastin Dropak, 630
G. D. Searle & Co.
Enovid Tabs., 628
Smith-Dorsey
Stetric Tabs., 444
Smith, Kline & French Laboratories, Inc.
Compazine Spansule Caps., 501
Compazine Tabs., 444; 25 mg., 629
E. R. Squibb & Sons
Diagnex Blue Acid Test, 629
Mycostatin Oint. (Vet.), 566
Streakacin Susp. (Vet.), 630
Sumycin Pediatric Drops, 630
Sumycin Susp., 630
Testagar & Company
Amodex Q Caps., 501
Pentryate Tabs., 444; —with Phenobarbital, 444; —Timed Caps., 629
Unipack Corp.
Strip Packaging, 630
U. S. Vitamin Corporation
Prednis Tabs., 629
The Upjohn Company
Alba-Penicillin Caps. (Vet.), 443
Comycin Caps., 443
Gelfilm, Opthalmic, Sterile, 501
Orinase Tabs., 499
Panmycin Phosphate Caps., 125 mg., 629
Zymabasic Drops, 501
Vanpelt & Brown
Rheastat Suspension, 629
Walker Laboratories
Flavinol-C Caps., 566
Wallace Laboratories
Milpath Tabs., 499
Milprem Tabs., 564
Warner-Chilcott Laboratories
Phosphatabs Test Kit, 629
Warren-Teed Products Co.
Ilopan Ampuls, 566
Somnalert Caps., 630
West-ward, Inc.
B_{12} Concentrate Inj., 566
Decavitamin Caps. USP, 501
White Laboratories, Inc.
Orabiotic Troches, 444
Winthrop Laboratories, Inc.
Aralen Phosphate Tabs., 628
Fergon c C Caplets, 444
Neo-Synephrine Comp. Cold Tabs., 629
Wyeth Laboratories, Inc.
Pen-Vee Sulfas for Susp., 443
Sparine HCl Tabs., 444

ADVERTISING INDEX

Abbott Laboratories
Dayalets....325, July, September 2nd Cover
Erythrocin....54–55, 118–199, 135, 171, 188, 276, 333, June 2nd cover, April, July 3rd cover
Harmonyl....382–383
Iberol....Jan., Mar., May 2nd cover, facing 453 & 553
Selsun....facing 452 & 552
Sur-Bex....197, 343, 502

The American Druggists' Insurance Company..113, 194, 348, 495, 580

Ames Company, Inc.
Albustix....396, 452
Clinitest....192, 264
Decholin....572
Nostyn..14, 130, April 2nd cover

Atlas Powder Company
N.F. & U.S.P. Pharmaceutical Aids....77, 208, 464

Blakiston Div., McGraw-Hill Book Company
Jenkins, Christian, Hager....549
"Scoville's The Art of Compounding"....268, 549

Bristol Laboratories Inc.
Tetrex Capsules....207, 410–411, 490–491

Bristol-Myers Company
Bufferin....263, 527

The Bulman Corporation
Cabinets....57
Prescription Centers....134, 266
Store Planning and Equipment....565, 621

Chesebrough Mfg. Co.
Half-inch Petroleum Gauze....133, 209
Vaseline Petrolatum Gauze U.S.P....556, 586

Hynson, Wescott & Dunning
Lutrexin....July, August 4th cover
Mercurochrome....June 4th cover
Thantis Lozenges....Jan., Mar., Sept., Oct. 4th cover
Trexinest....Feb., Apr., May 4th cover

Johnson & Johnson
K-Y Sterile Lubricant....47, 161

Lea & Febiger
"Gathercoal and Wirth Pharmacognosy"....276
3 New Editions....458, 619

Lederle Laboratories
Achrocidin Syrup....107, 331
Achromycin V....176–177, 281
A.Ph.A. Convention Invitation....152
Filibon....523
Gevral....71, 624
Incremin....43
Kynex....240–241
Pathibamate....379

Eli Lilly and Company
Compren....394
Darvon....570
Homicebrin....258
Mi-Cebin....122, 338, 506
Multicebrin....186
Theracebrin....450
V-Cillin....2
Vi-Mix Drops....66

J. B. Lippincott Company
N.F.X.; other publications....50, 51, 588

Mack Publishing Company
Remington's Practice of Pharmacy....593

The S. E. Massengill Company
Prescription Specialties....65, 127, 185, 514, 582

McKesson & Robins, Inc.
"Step-Saver" Shelf Unit....201

Merck & Company
Fruit-Freeze....351
The Merck Manual....563, 583

Merck Sharp & Dohme
Meprolone....243
S. T. 37....591
Sucrets....591
Tetrazets....511
Tracinets....591
Tyrolaris....591

National Brands Div., Sterling Drug, Inc.
Bayer Aspirin....275, July 3rd cover, 515

Owens-Illinois
1854 Show Globe....17
Prescription Vials....203, 337
Rx Med-Box....525

Parke, Davis & Company
Caladryl....461
Geriplex....23, 137, 273, 508
Myadec....Feb. 2nd cover, 199, 353, 575
Ziradryl....403

Pfizer Laboratories
Matromycin....205
"Preferred Stock"....500
Sigmamycin....1, 109, 173

Philadelphia College of Pharmacy and Science....15, 138, 196, 270, 584

A. H. Robins Co., Inc.
Dimetane....627
Donnagel with Neomycin....August 2nd cover
Prescription Specialties....11, 131, 269
Robaxin....579

Roche Laboratories
Gantrimycin..Jan., Feb. 3rd cover,
Marsilid....346–347
Romilar CF...Sept., Oct 3rd cover

J. B. Roerig & Company
Essay Contest....Oct. 2nd cover

Schering Corporation
Meti-Steroids....Jan., Feb., Mar., Apr., May, Oct. center spread
Sebizon Lotion....7, Mar. 3rd cover, 244–245
Trilafon....278–279, May, June, July, Aug., Sept. center spread

Smith, Kline & French Laboratories
Benzedrex....267, 409, 516
Compazine....465
Compazine Ampuls....280
Compazine Spansule Capsules 401
Compazine Tablets....257
Dexedrine Spansule....529
Thorazine Spansule....581

E. R. Squibb & Sons
Engran....24, 169
Mycostatin Dusting Powder..435
Mysteclin V....321, 562
Sumycin....237, 562

Sunkist Growers
Citrus Bio-flavonoids....9, 121, May 3rd cover, 399, 519
Pectin N.F....75, 195, 356, August 3rd cover, 587

Travenol Laboratories, Inc.
Incert....235, 340, 512, 576
Vi-Cert....260

Warner-Chilcott Laboratories
Peritrate....442, 459, 560, 585
Plestran..13, 68, 165, 249, 327, 389
Pyridium....329

West-ward
Vitamin Candies....393, 505, 569
West-ward 1957 Catalogue...449

Winthrop Laboratories, Inc.
Aralen....521
Creamalin....557
Fergon with C....455
New prescription items....4
Neocurtasal....124
Neo-Synephrine....191, 589
NTZ Nasal Spray....375
pHisoHex....111, 271, 413

Wyeth, Inc.
Collyrium....349
Hospital Pharmacy....251
Pen-Vee-Cidin....21
Polymagma....513
Sopronol....404

ar-
..
270, 584
.. 627
..
nd cover
...
131, 269
... 579
rd cover,
.346–347
3rd cover
2nd cover
b., Mar.,
r spread
...
244–245
ay, June,
r spread
ra-
409, 516
... 465
... 280
ıles 401
... 257
... 529
... 581
..24, 169
er.. 435
.321, 562
.237, 562
...
399, 519
... 75,
over, 587
, 512, 576
... 260
s
560, 585
327, 389
... 329
505, 569
... 449
... 521
... 557
... 455
... 4
... 124
.191, 589
... 375
271, 413
... 349
... 251
... 21
... 513
... 404